

Service Manual

ORDER NO.
RRV1047

MULTI CD DOUBLE DECK AMPLIFIER

XD-J225M

CD DOUBLE DECK AMPLIFIER

XD-J220

- Refer to the service manual ARP2649 for XD-J215M/HE and XD-J210/HE.

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model		Power Requirement	The voltage can be converted by the following method.
	XD-J225M	XD-J220		
HE	○	○	AC220-230V	AC240V, *
HB**	—	○	AC240V	AC220-230V, *
HEWZIW	○	○	AC220-230V	AC240V, *

*: Alter the wiring of the Power-supply block at the primary winding of Power transformer referring to the "Line Voltage Selection" described in Service Manual.

** : XD-J225M/HB model is not on sale.

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O-DFN DEC. 1993 Printed in Japan

1. CONTRAST OF MISCELLANEOUS PARTS

NOTES :

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

■ FOR XD-J225M

XD-J225M/HE, HB, HEWZIW and XD-J215M/HE have the same construction except for the following :

Mark	Symbol & Description	Part No.				Remarks
		XD-J215M /HE	XD-J225M /HE	XD-J225M /HB	XD-J225M /HEWZIW	
NSP	AF assy	AWZ4648	AWZ4648	AWZ4648	AWZ4649 *1	
	VOLUME assy	AWZ4655	AWZ7265	AWZ7265	AWZ7266	
	SW assy	AWK1746	.....	.....	.....	
	SURROUND assy	AWM1445	AWM1449 *1	AWM1449 *1	AWM1449 *1	
	HEADPHONE assy	AWZ4666	AWZ4666	AWZ4666	AWZ4667 *1	
NSP	TRANS CONNECT assy	AWZ4672	AWZ4672	AWZ4672	AWZ4673 *1	
	SUB TRANS assy	AWZ4678	AWZ4678	AWZ4681 *2	AWZ4679 *1	
NSP	CD PLAYER unit	PD-XD115M/E	PD-XD125M/E	PD-XD125M/E	PD-XD125M/E	
Δ	AC power cord	ADG1127	ADG1127	ADG1144	ADG1127	
NSP	Button (POWER)	AAD2370	AAD7050	AAD7050	AAD7050	
	Cursor button	AAD2377	AAD7010	AAD7010	AAD7010	
	Button (DECK)	AAD2379	AAD7011	AAD7011	AAD7011	
	Decorative plate (DECK)	AAK2398	AAK7023	AAK7023	AAK7023	
	Decorative plate (AMP)	AAK2399	AAK7055	AAK7055	AAK7055	
	Screw (GND)	.....	.....	.....	ABA1047	
	Name plate	AAL2014	AAL7010	AAL7009	AAL7011	
	Cassette door L (PLS)	AAN1365	AAN7003	AAN7003	AAN7003	
	Cassette door R (PLS)	AAN1366	AAN7006	AAN7006	AAN7006	
	Strain relief	.....	.....	AEC-882	.....	
	Front panel	AMB2091	AMB7021	AMB7021	AMB7021	
	Rear panel	ANC2008	ANC7016	ANC7017	ANC7016	
	Magazine assy	PXA1507	PXA1523	PXA1523	PXA1523	
	Packing case	AHD2505	AHD7007	AHD7007	AHD7007	
	Operating instructions (English, French, German, Italian)	ARE1266	ARE7005	.....	.....	
	Operating instructions (Dutch, Swedish, Spanish, Portuguese)	ARE1267	ARE7006	.....	.....	
	Operating instructions (English)	.....	.....	ARB7003	.....	
	Operating instructions (German, Italian)	.....	.....	.....	ARC7003	

Note :

*1 : AWZ4649, AWZ4667, AWZ4673, AWZ4679 and AWM1449 are the same as those of XD-J215M/HEWZIW which is shown in the service manual ARP2649 for XD-J215M.

*2 : AWZ4681 is the same as that of XD-J215M/HB which is shown in the service manual ARP2649 for XD-J215M.

CD PLAYER UNIT

PD-J225M/E and PD-J215M/E have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		PD-J215M/E	PD-J225M/E	
NSP NSP	Control button	PAC1705	PAC1787	
	Function panel assy	PEA1270	.....	
	Function panel	PNW2327	PNW2472	
	Servo mechanism assy M	PXA1417	PXA1543 *3	

Note :

*3 : Although PXA1543 and PXA1417 are different in part number, they consist of the same components.

■ FOR XD-J220

XD-J220/HE, XD-J220/HB, XD-J220/HEWZIW and XD-J210/HE have the same construction except for the following :

Mark	Symbol & Description	Part No.				Remarks
		XD-J210 /HE	XD-J220 /HE	XD-J220 /HB	XD-J220 /HEWZIW	
NSP	AF assy	AWZ4648	AWZ4648	AWZ4648	AWZ4649 *1	
	VOLUME assy	AWZ4655	AWZ7265	AWZ7265	AWZ7266	
	SW assy	AWK1746	.....	.....	.....	
	SURROUND assy	AWM1445	AWM1449 *1	AWM1449 *1	AWM1449 *1	
	HEADPHONE assy	AWZ4666	AWZ4666	AWZ4666	AWZ4667 *1	
NSP	TRANS CONNECT assy	AWZ4672	AWZ4672	AWZ4672	AWZ4673 *1	
NSP	SUB TRANS assy	AWZ4678	AWZ4678	AWZ4681 *2	AWZ4679 *1	
NSP	CD PLAYER unit	PD-J210/E	PD-J210/E	PD-J210/E	PD-J210/E	
△	AC power cord	ADG1127	ADG1127	ADG1144	ADG1127	
NSP	Button (POWER)	AAD2370	AAD7050	AAD7050	AAD7050	
	Cursor button	AAD2377	AAD7010	AAD7010	AAD7010	
	Button (DECK)	AAD2379	AAD7011	AAD7011	AAD7011	
	Decorative plate (DECK)	AAK2398	AAK7023	AAK7023	AAK7023	
	Decorative plate (AMP)	AAK2399	AAK7055	AAK7055	AAK7055	
	Screw (GND)	.....	.....	.....	ABA1047	
	Name plate	AAL2011	AAL7007	AAL7006	AAL7008	
	Cassette door L (PLS)	AAN1365	AAN7003	AAN7003	AAN7003	
	Cassette door R (PLS)	AAN1366	AAN7006	AAN7006	AAN7006	
	Strain relief	.....	.....	AEC-882	.....	
	Front panel	AMB2090	AMB7020	AMB7020	AMB7020	
	Rear panel	ANC2008	ANC7016	ANC7017	ANC7016	

Note :

*1 : AWZ4649, AWZ4667, AWZ4673, AWZ4679 and AWM1449 are the same as those of XD-J210/HEWZIW which is shown in the service manual ARP2649 for XD-J210.

*2 : AWZ4681 is the same as that of XD-J210/HB which is shown in the service manual ARP2649 for XD-J210.

Mark	Symbol & Description	Part No.				Remarks
		XD-J210 /HE	XD-J220 /HE	XD-J220 /HB	XD-J220 /HEWZIW	
	Packing case	AHD2504	AHD7006	AHD7006	AHD7006	
	Operating instructions (English, French, German, Italian)	ARE1264	ARE7003	.....	.....	
	Operating instructions (Dutch, Swedish, Spanish, Portuguese)	ARE1265	ARE7004	.....	.....	
	Operating instructions (English)	.....	.....	ARB7002	.....	
	Operating instructions (German, Italian)	.....	.....	.....	ARC7002	

CD PLAYER UNIT

PD-J210/E and PD-J210/E have the same construction except for the following :

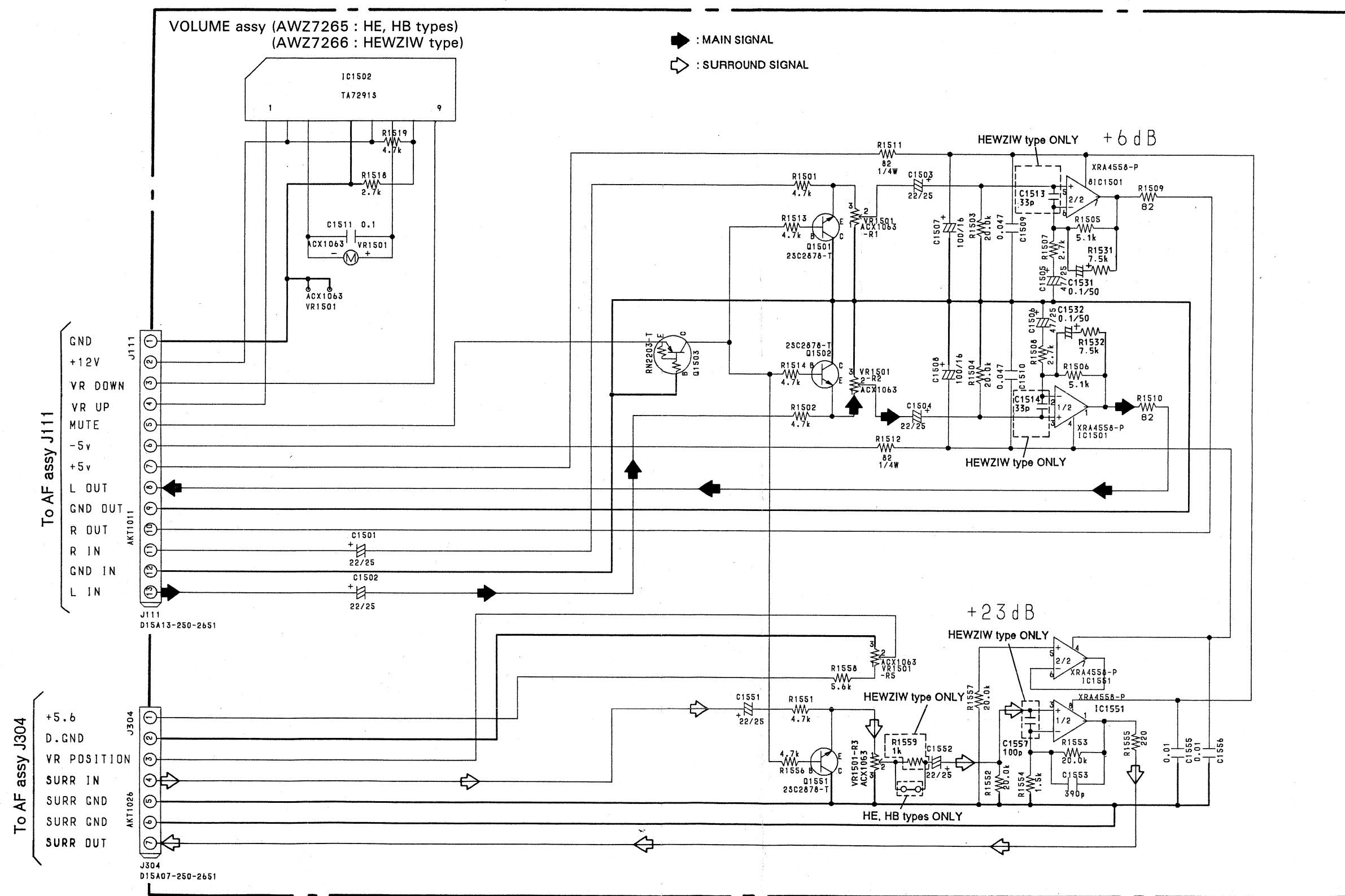
Mark	Symbol & Description	Part No.		Remarks
		PD-J210/E	PD-J210/E	
NSP	Control button	PAC1705	PAC1787	
	Function panel assy	PEA1272	.....	
	Function panel	PNW2325	PNW2471	
	Name plate	PNW2234	PNW2447	

VOLUME assy

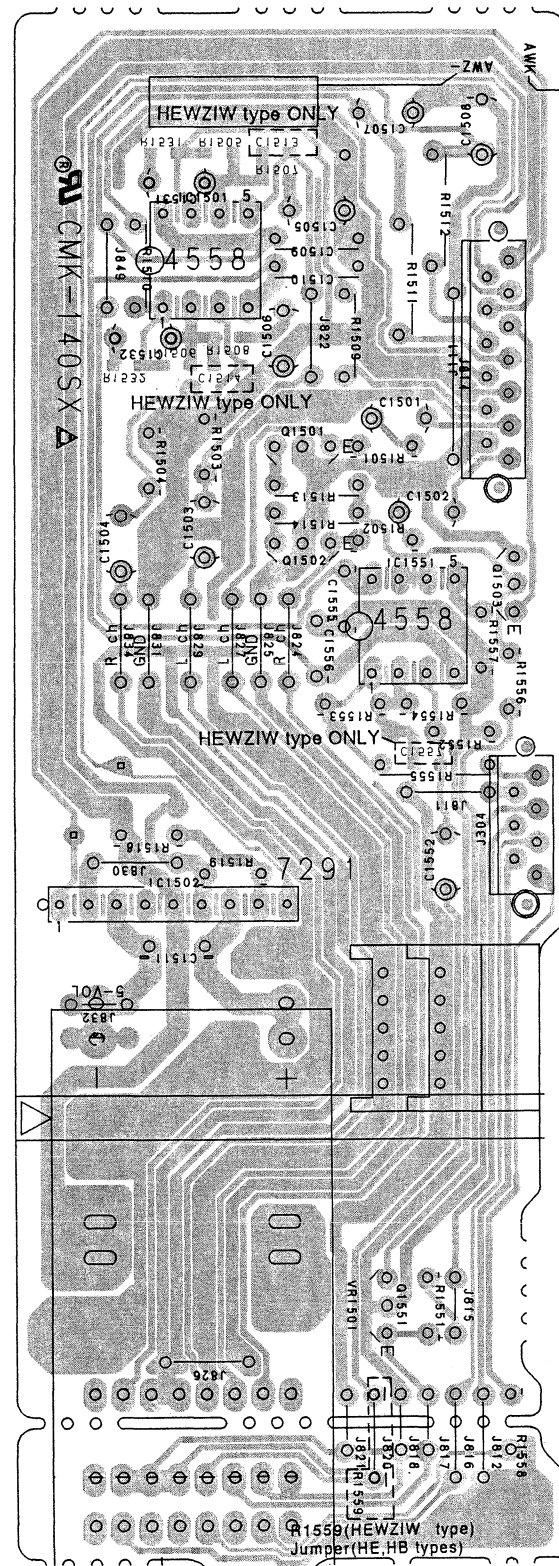
AWZ7265, AWZ7266 and AWZ4655 have the same construction except for the following :

Mark	Symbol & Description	Part No.			Remarks
		AWZ4655	AWZ7265	AWZ7266	
	C1513, C1514			CCSQSL330J50	
	C1531, C1532	.....	CEASOR1M50	CEASOR1M50	
	C1557	.....	.....	CCSQCH101J50	
	R1505, R1506	RS1/10S272J	RS1/10S512J	RS1/10S512J	
	R1531, R1532	.....	RS1/10S752J	RS1/10S752J	
	R1559	.....	.....	RS1/8PM102J	

SCH-1F



VOLUME assy



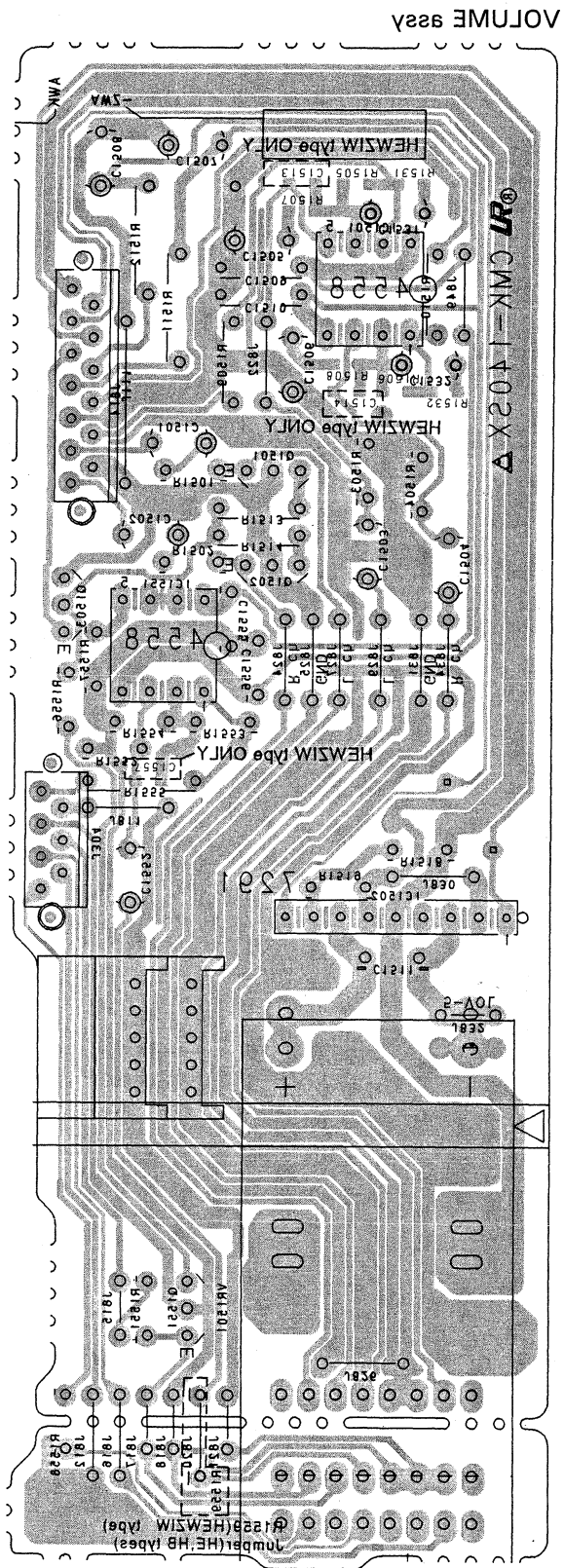
• This diagram is viewed from the mounted parts side.

A

B

C

D



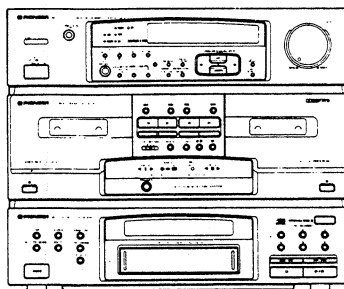
VOLUME 9551

- This diagram is viewed from the foil side.

Service Manual

PIONEER®

The Art of Entertainment



ORDER NO.
ARP2649

MULTI CD DOUBLE DECK AMPLIFIER

XD-J215M

CD DOUBLE DECK AMPLIFIER

XD-J210

XD-J215M AND XD-J210 HAVE THE FOLLOWING :

Type	Model		Power Requirement	Remarks
	XD-J215M	XD-J210		
HE	○	○	AC220V-230V, 240V (Switchable)*	
HB	○	○	AC220V-230V, 240V (Switchable)*	
HEWZIW	○	○	AC220V-230V, 240V (Switchable)*	

* Change the connection of the power transformer's primary wiring.

- This manual is applicable to the following : XD-J215M/HE, HB and HEWZIW ; XD-J210/HE, HB and HEWZIW.
- For the following : XD-J215M/HB and HEWZIW ; XD-J210/HB and HEWZIW, refer to page 130.
- These products are systems components.
Each of these products does not function properly when independent ; to avoid malfunctions, be sure to connect it to the prescribed system component (s), otherwise damage may result.

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1. SAFETY INFORMATION

(FOR EUROPEAN MODEL ONLY)

VARO!

AVATTAESSA JA SUOJALUKITUS
OHITETTAESSA OLET ALTTIINA
NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE.
ÄLÄ KATSO SÄTEESEEN.



LASER
Kuva 1
Lasersäteilyn
varoituserkki

ADVERSEL:

USYNLIG LASERSTRÅLING VED ÅBNING
NÅR SIKKERHEDSAFBRYDERE ER UDE AF
FUNKTION UDGÅ UDSÆTTELSE FOR
STRÅLING.

VARNING!

OSYNLIG LASERSTRÅLNING NÅR DENNA
DEL ÄR ÖPPNAD OCH SPÄRREN
ÄR URKOPPLAD. BETRÄKTA EJ STRÅLEN.

WARNING!

DEVICE INCLUDES LASER DIODE WHICH
EMITS INVISIBLE INFRARED RADIATION
WHICH IS DANGEROUS TO EYES. THERE IS
A WARNING SIGN ACCORDING TO PICTURE
1 INSIDE THE DEVICE CLOSE TO THE LASER
DIODE.



LASER
Picture 1
Warning sign for
laser radiation

IMPORTANT

THIS PIONEER APPARATUS CONTAINS
LASER OF CLASS 1.
SERVICING OPERATION OF THE APPARATUS
SHOULD BE DONE BY A SPECIALLY
INSTRUCTED PERSON.

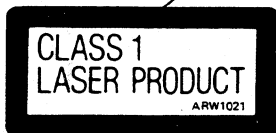
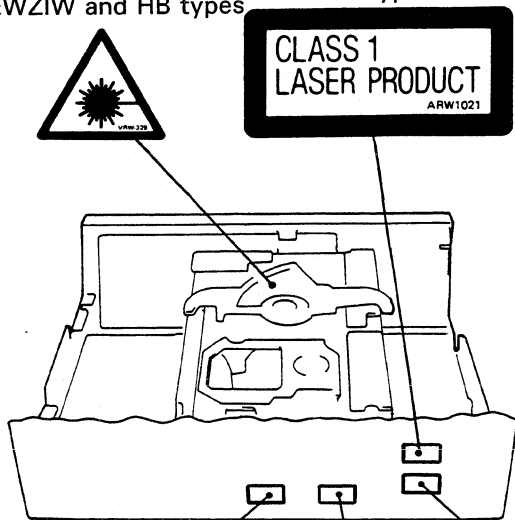
LASER DIODE CHARACTERISTICS

MAXIMUM OUTPUT POWER: 5 mw
WAVELENGTH: 780-785 nm

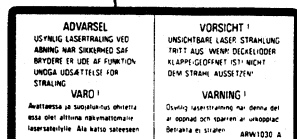
LABEL CHECK (MULTI MAGAZINE type)

HE, HEWZIW and HB types

HB type



HE and HEWZIW types



HE and HEWZIW types



HB type

Additional Laser Caution

1. Laser Interlock Mechanism

The ON/OFF (ON : low level, OFF : high level) status of the LSP1 (S601) and LSP2 (S602) switches for detecting the loading state is detected by the system microprocessor, and the design prevents laser diode oscillation when both switches LSP1 and LSP2 are not ON (low level) (clamped state).

Thus, interlock will no longer function if switches LSP1 (S601) and LSP2 (S602) are deliberately shorted.

The interlock also does not operate in the test mode*.

Laser diode oscillation will continue, if pin 1 of M51593FP (IC101) on the preamplifier board loaded on pick up assembly are connected to GND, or pin 19 is connected to low level (ON), or else the terminals of Q101 are shorted to each other (fault condition).

2. When the cover is opened with the servo mechanism block removed to be turned over, close viewing of the objective lens with the naked eye will cause exposure to a Class 1 laser beam.

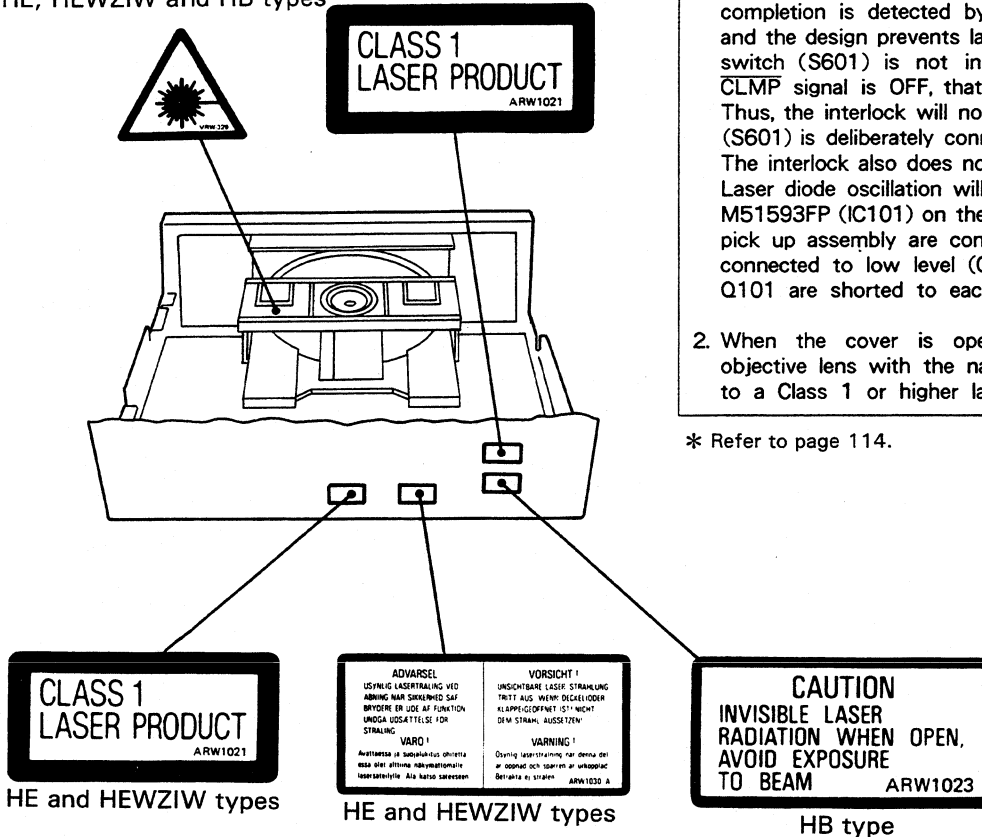
*92M1A

* Refer to page 105.

LABEL CHECK (SINGLE MAGAZINE type)

HE, HEWZIW and HB types

HB type



Additional Laser Caution

1. Laser Interlock Mechanism

The position of the switch (S601) for detecting loading completion is detected by the system microprocessor, and the design prevents laser diode oscillation when the switch (S601) is not in CLMP terminal side (when CLMP signal is OFF, that is high level).

Thus, the interlock will no longer function if the switch (S601) is deliberately connected to ground (low level). The interlock also does not operate in the test mode*. Laser diode oscillation will continue, if pins 1 and 2 of M51593FP (IC101) on the preamplifier board loaded on pick up assembly are connected to GND, or pin 19 is connected to low level (ON), or else the terminals of Q101 are shorted to each other (fault condition).

2. When the cover is opened, close viewing of the objective lens with the naked eye will cause exposure to a Class 1 or higher laser beam.

* Refer to page 114.

LITHIUM BATTERY NOTICE

WARNING!

Lithium batteries. Danger of explosion. Replacement must be done by qualified personnel and only by following the instructions given in the service manual.

This warning is stated on the product or in the operating instructions. When replacing the lithium batteries, follow the note below.

Dispose of the used battery promptly. Keep away from children. Do not disassemble and do not dispose of in fire.

The battery used in this device may present a fire or chemical hazard if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate. Replace only with the same Part Number. Use of another battery may present a risk of fire or explosion.

Note: The lithium battery installation position is shown in the exploded view and the P.C. board pattern.

ADVARSEL!

Lithiumbatteri — Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

Denne advarsel er angivet på produktet eller i brugsvejledningen. Ved udskiftning af lithium batterierne følges nedenstående anvisning.

Batterierne må kun udskiftes med batterier af samme type og mærke.

VARNING

Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

Denna varning finns på apparaten eller i bruksanvisningen. Följ nedanstående anvisningar vid byte av litiumbatterier. Batterierna får endast bytas ut mot litiumbatterier av samma typ och fabrikat.

2. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The $\triangle$ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

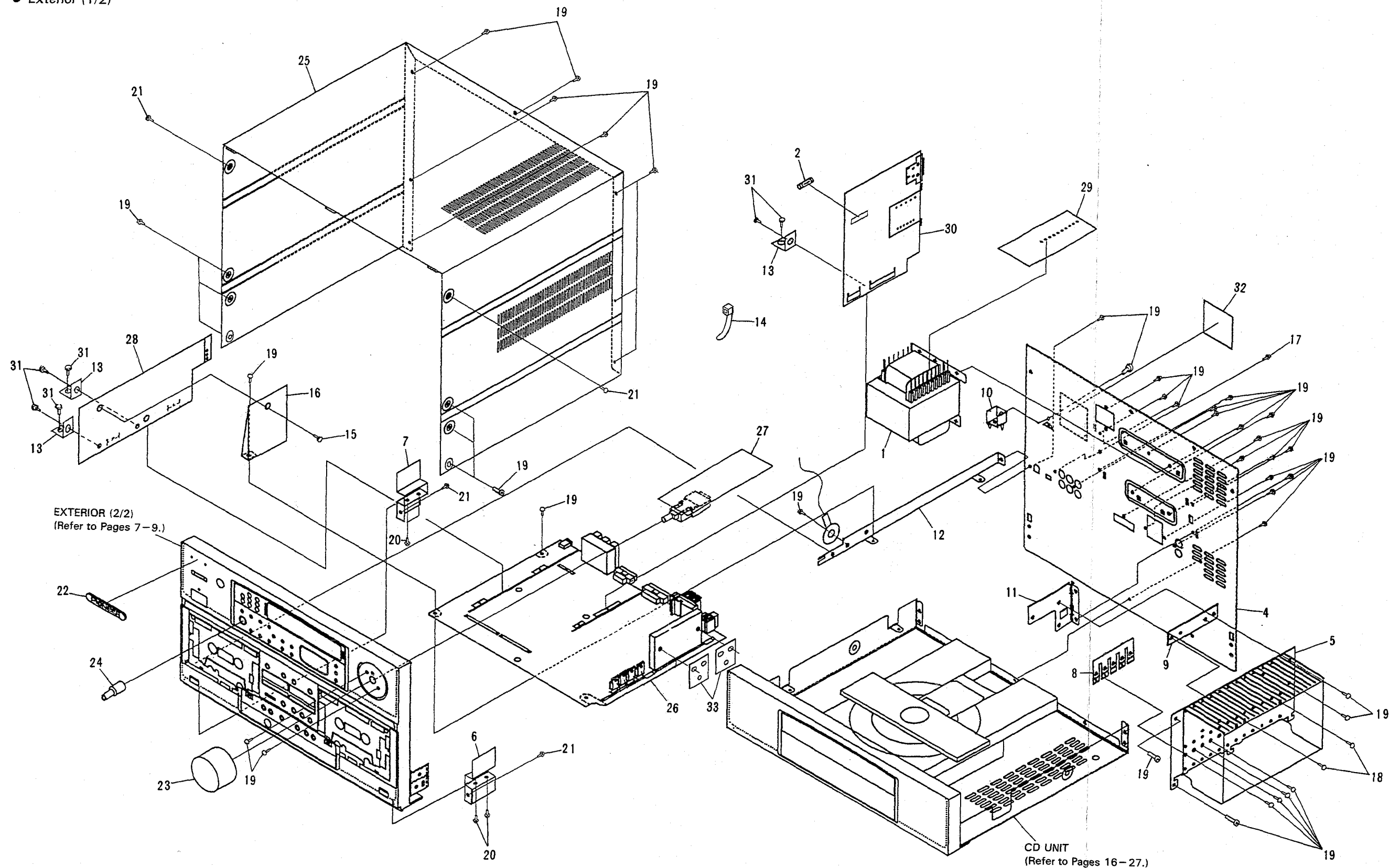
2.1 DECK AMP BLOCK (XD-J215M AND XD-J210)

2.1.1 Exterior (1/2)

Parts list

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
$\triangle$	1	POWER TRANSFORMER (T)	ATS1467		26	AF ASSEMBLY	AWZ4648
$\triangle$	2	FUSE (T1A/250V, FU1102)	AEK-508		27	VOLUME ASSEMBLY	AWZ4655
	3	.....			28	SURROUND ASSEMBLY	AWM1445
	4	REAR PANEL (MTL)	ANC2008	NSP	29	TRANS CONNECT ASSEMBLY	AWZ4672
	5	HEAT SINK (AL)	ANH1407		30	SUB TRANS ASSEMBLY	AWZ4678
	6	PLATE L	ANG1536		31	NYLON RIVET	AEC1160
	7	PLATE R	ANG1537	NSP	32	NAME PLATE	AAL2014
NSP	8	PLATE	ANG1561			(For XD-J215M)	
NSP	9	HOLDER	ANG1600	NSP	32	NAME PLATE	AAL2011
NSP	10	DUMMY JACK	ANG1736			(For XD-J210)	
	11	HEAT SINK HOLDER (MTL)	ANG1777		33	MICA SHEET	AEP-313
	12	PCB HOLDER B (MTL)	ANG1779				
	13	PCB HOLDER (MTL)	ANG1838				
NSP	14	BINDER	AEC-093				
	15	NYLON RIVET	AEC-525				
	16	BARRIER (PVC)	AEC1504				
	17	SCREW	ABA-222				
	18	SCREW (3×18)	ABA1018				
	19	SCREW	BBZ30P080FZK				
	20	SCREW	BBZ30P100FZK				
	21	SCREW	VPZ30P080FZK				
	22	BADGE (ABS)	AAM1047				
	23	VOL KNOB	AAB1337				
	24	MIC KNOB	AAB1339				
	25	BONNET CASE (MTL)	ANE1390				

● Exterior (1/2)



2.1.2 Exterior (2/2)

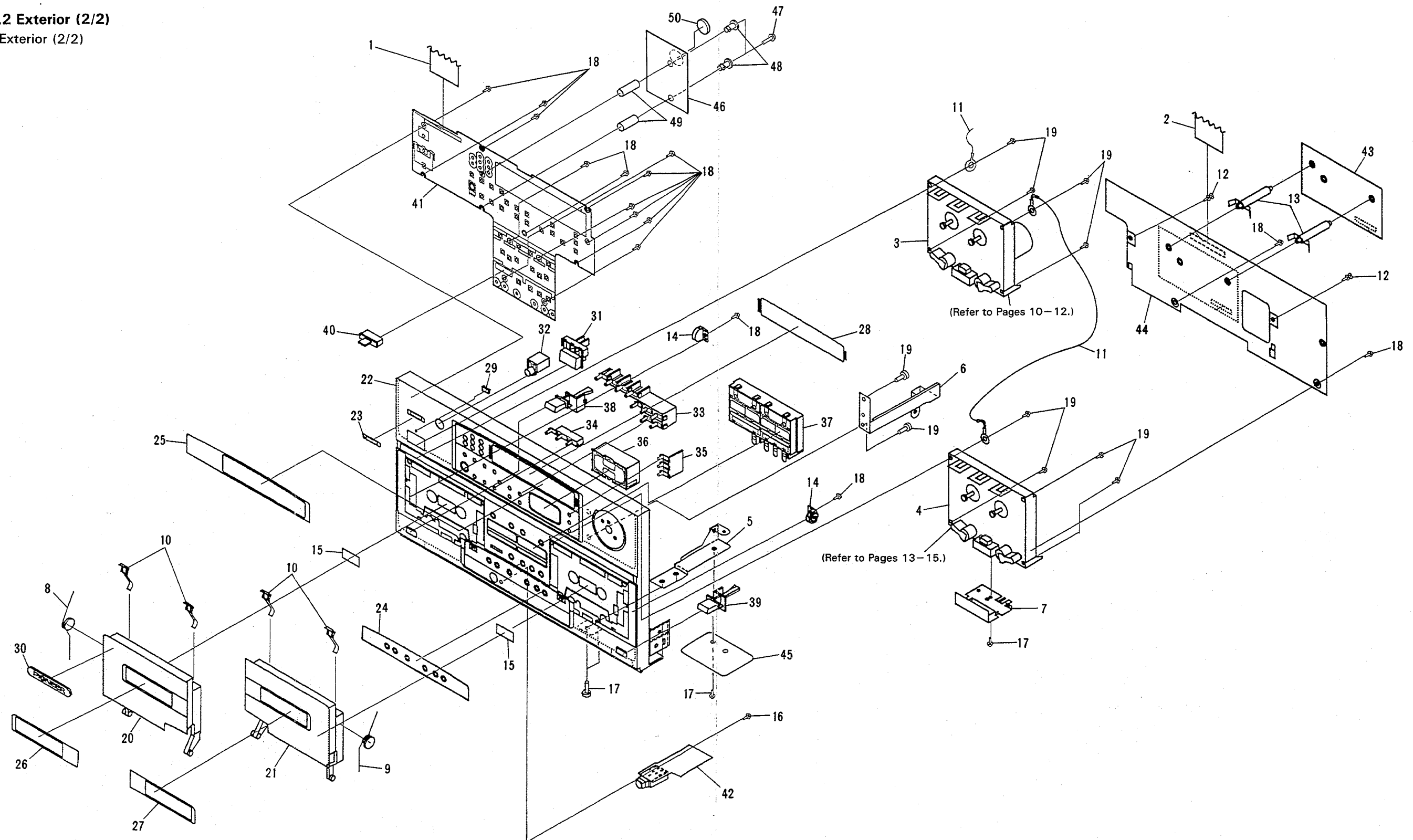
● Exterior (2/2)

A

B

C

D



A

B

C

D

Parts list

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
△NSP	1	FLAT CABLE (J112)	ADD1112		31	BUTTON (POWER)	AAD2370
△	2	FLAT CABLE (J105)	ADD1116		32	BUTTON (FUNCTION)	AAD2372
	3	CASSETTE 1 MECHA UNIT	EXK2026		33	BUTTON (GEQ)	AAD2373
●	4	CASSETTE 2 MECHA UNIT	EXK2056		34	BUTTON (DOLBY SURROUND)	AAD2374
	5	PCB HOLDER A (MTL)	ANG1778		35	BUTTON (AUDITION)	AAD2375
	6	HEAT SINK HOLDER (MTL)	ANG1837		36	CURSOR BUTTON	AAD2377
	7	SHIELD PLATE (MECHA)	ANK1157		37	BUTTON (DECK)	AAD2379
	8	DOOR SPRING L	ABH1085		38	EJECT BUTTON L (PLS)	AAD2380
	9	DOOR SPRING R	ABH1086		39	EJECT BUTTON R (PLS)	AAD2381
	10	KEEP PLATE	ABK1017		40	SLIDE KNOB (PLS)	AAE1160
NSP	11	EARTH LEAD	ADB1006		41	DISPLAY ASSEMBLY	AWZ4658
NSP	12	NYLON RIVET	AEC1160		42	HEADPHONE ASSEMBLY	AWZ4666
	13	PCB SPACER	AEC1446		43	DOLBY-C ASSEMBLY	AWZ4669
	14	DAMPER ASSEMBLY	AXA1008		44	TAPE ASSEMBLY	AWV1336
	15	SHEET	AAX1301	NSP	45	SHIELD PLATE	ANK1159
	16	SCREW (2.6×8)	ABA1095		46	SW ASSEMBLY	AWK1746
	17	SCREW	BBZ30P080FZK		47	SCREW	PBZ26P250FMC
	18	SCREW	BPZ26P080FMC	NSP	48	BUSH	AEC1326
	19	SCREW	VPZ30P080FZK	NSP	49	COLLAR	AEC1327
	20	CASSETTE DOOR L (PLS)	AAN1365	△	50	LITHIUM BATTERY	AEX1014
	21	CASSETTE DOOR R (PLS)	AAN1366				
	22	FRONT PANEL (For XD-J215M)	AMB2091				
	22	FRONT PANEL (For XD-J210)	AMB2090				
	23	FILTER (REMOCON)	AAK2376				
	24	DECORATIVE PLATE (DECK)	AAK2398				
	25	DECORATIVE PLATE (AMP)	AAK2399				
	26	DECORATIVE PLATE (DOOR) L	AAK2400				
	27	DECORATIVE PLATE (DOOR) R	AAK2402				
	28	FL FILTER (PVC)	AAK2430				
	29	POWER LENS (PLS)	AAK2442				
	30	BADGE (ABS)	AAM1047				

XD-J215M, XD-J210

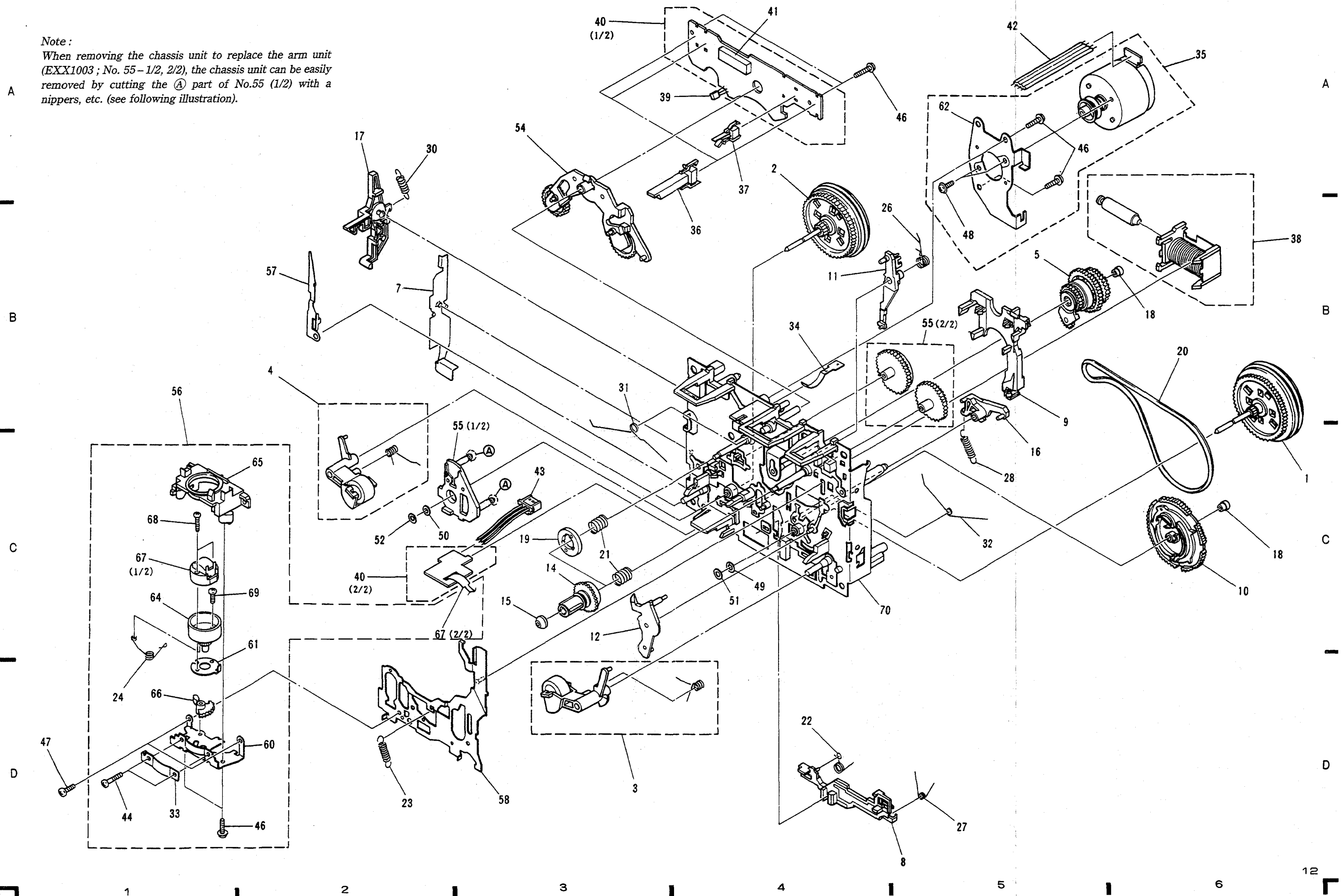
2.1.3 Cassette 1 Mecha Unit

Parts list

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	FLYWHEEL UNIT (FWD)	EXA1222		46	SCREW (M2×8)	ATZ20P080FMC
	2	FLYWHEEL UNIT (RVS)	EXA1223		47	SCREW	BSZ20P050FMC
	3	ROLLER UNIT (FWD)	EXA1224		48	SCREW	PMS26P025FUC
	4	ROLLER UNIT (RVS)	EXA1225		49	WASHER	EBF1008
	5	LIMITER UNIT	EXA1226		50	WASHER	EBF1009
	6	.....			51	WASHER	EBF1010
	7	EJECT LEVER L2	AZN2063		52	WASHER	EBF1011
	8	LEVER	ENV1305		53	.....	
	9	BRAKE	ENV1317		54	ARM UNIT	EXX1006
	10	GEAR	ENV1318		55	ARM UNIT	EXX1003
	11	LOCK ARM	ENV1159		56	P HEAD ASSEMBLY	EXX1008
	12	NR ARM	ENV1163		57	ARM	ENC1288
	13	.....			58	HEAD BASE UNIT	EXA1230
	14	REEL	ENV1335		59	.....	
	15	REEL BUSH	ENV1338	NSP	60	BRACKET	ENC1284
	16	ARM	ENV1330	NSP	61	PLATE	ENC1285
	17	EJECT LEVER L1	AZN2108	NSP	62	BRACKET	ENC1199
	18	BUSH	ENV1184		63	.....	
	19	MAGNET	ENV1336	NSP	64	HOLDER	ENV1161
	20	BELT	ENT1023	NSP	65	HOLDER	ENV1301
	21	SPRING	EBH1424	NSP	66	GEAR	ENV1177
	22	SPRING	EBH1401	NSP	67	P HEAD UNIT	EXA1110
	23	SPRING	EBH1203	NSP	68	SCREW	JGZ14P085FNI
	24	SPRING	EBH1402	NSP	69	SCREW	JGZ14P040FNI
	25	.....		NSP	70	CHASSIS UNIT	.....
	26	SPRING	EBH1406				
	27	SPRING	EBH1407				
	28	SPRING	EBH1408				
	29	.....					
	30	SPRING	EBH1409				
	31	SPRING	EBH1410				
	32	SPRING	EBH1256				
	33	SPRING	EBL1013				
	34	SPRING	EBL1014				
	35	MOTOR UNIT	EXA1241				
	36	SWITCH (Detect)	ESN1009				
	37	SWITCH (Mode)	ESN1010				
	38	SOLENOID	EXP1005				
	39	HALL IC	DN6847SE				
	40	COMPLEX PCB	ENX1020				
	41	CONNECTOR (10P)	EKS1013				
	42	LEAD WIRE (4P)	EDD1003				
	43	CONNECTOR (3P)	EDE1009				
	44	SCREW (AZIMUTH)	EBA1020				
	45	.....					

Note:

When removing the chassis unit to replace the arm unit (EXX1003; No. 55-1/2, 2/2), the chassis unit can be easily removed by cutting the (A) part of No.55 (1/2) with a nippers, etc. (see following illustration).



XD-J215M, XD-J210

2.1.4 Cassette 2 Mecha Unit

Note :
When removing the chassis unit to replace the arm unit (EXX1003 ; No. 55-1/2, 2/2), the chassis unit can be easily removed by cutting the ④ part of No.55 (1/2) with a nippers, etc. (see following illustration).

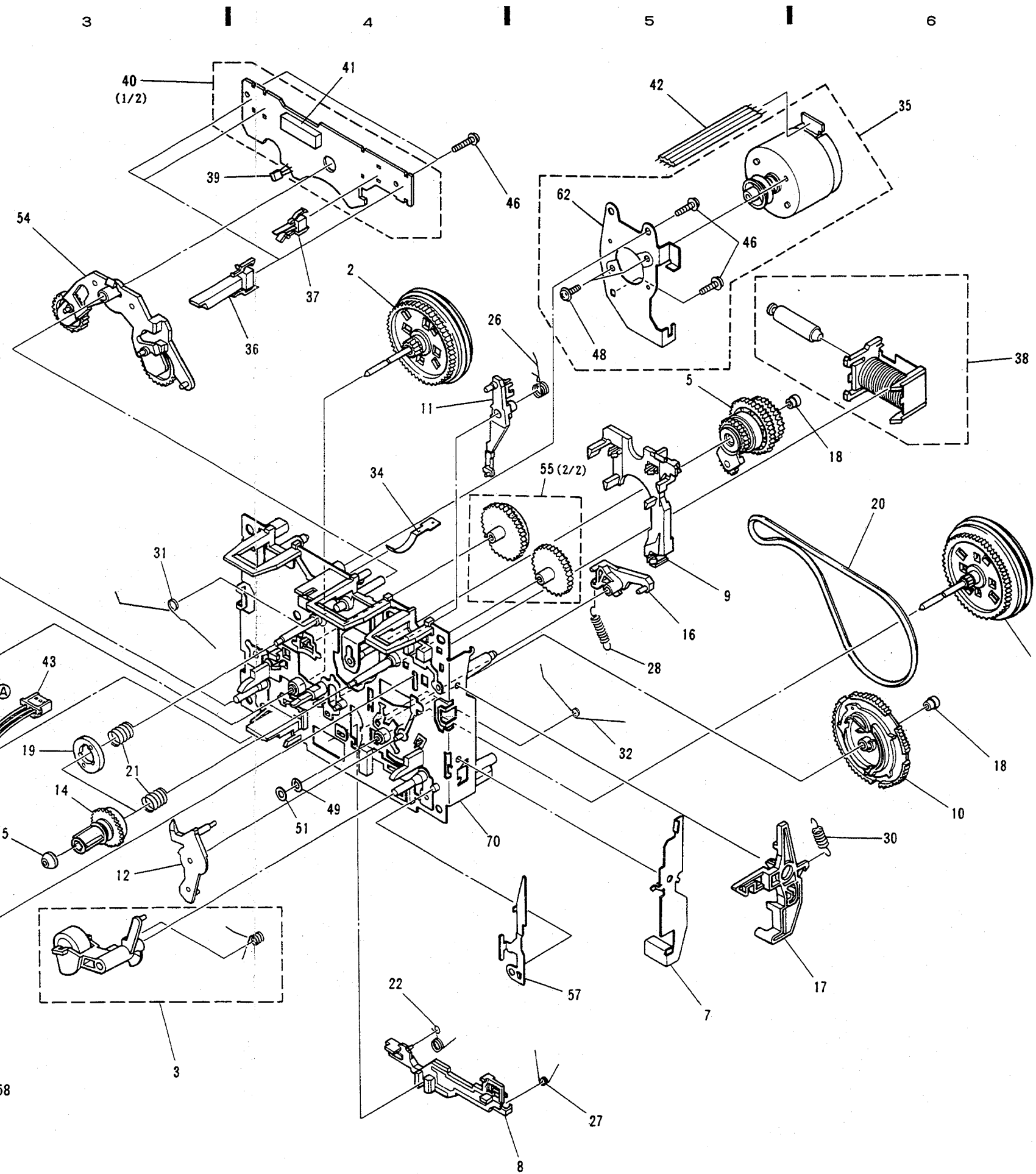
A

B

C

D

13



A

B

C

D

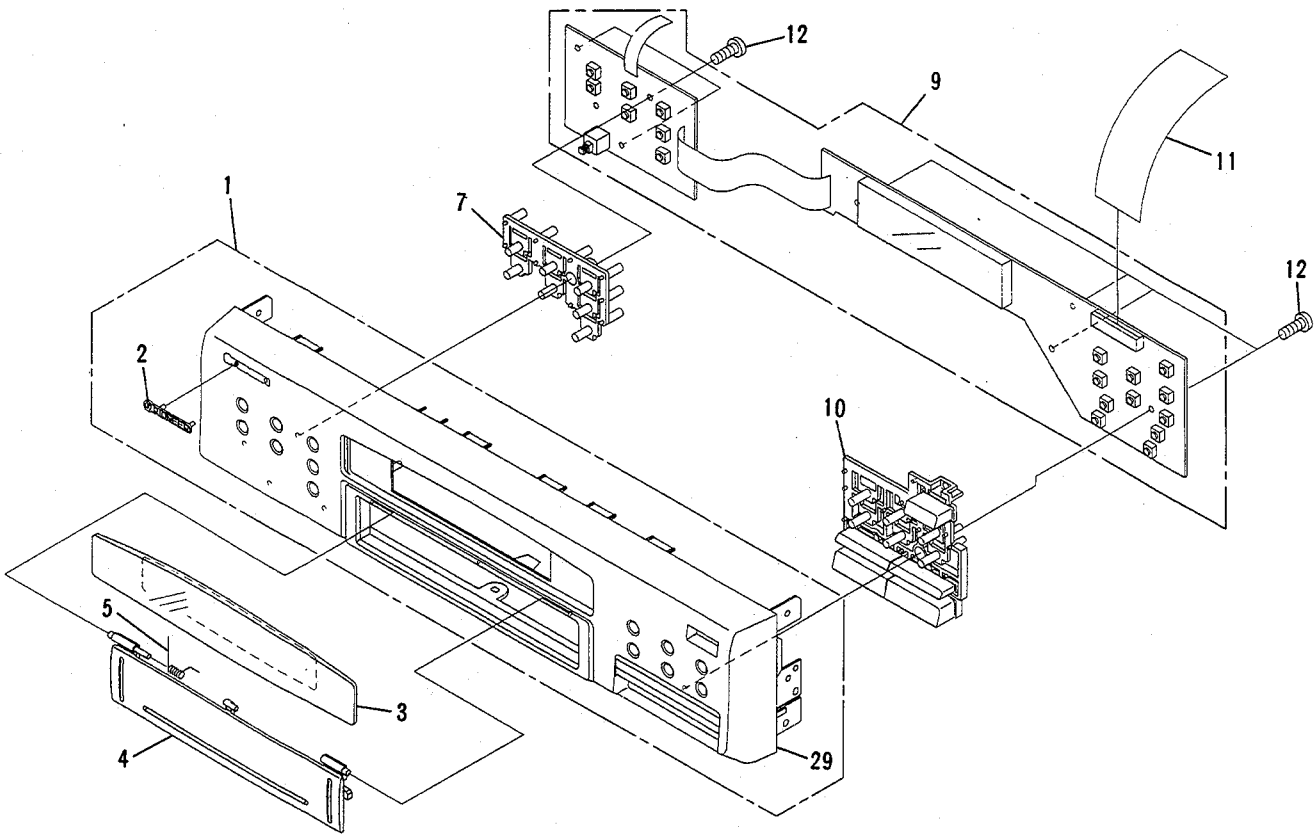
Parts list

Mark	No.	Description	Parts No.
	1	FLYWHEEL UNIT (FWD)	EXA1222
	2	FLYWHEEL UNIT (RVS)	EXA1223
	3	ROLLER UNIT (FWD)	EXA1224
	4	ROLLER UNIT (RVS)	EXA1225
	5	LIMITER UNIT	EXA1226
	6	.....	
	7	EJECT LEVER R2	AZN2064
	8	NR LEVER	ENV1305
	9	BRAKE	ENV1317
	10	CAM GEAR	ENV1318
	11	LOCK ARM	ENV1159
	12	NR ARM	ENV1163
	13	.....	
	14	REEL	ENV1335
	15	REEL BUSH	ENV1338
	16	ARM	ENV1330
	17	EJECT LEVER R1	AZN2109
	18	BUSH	ENV1184
	19	MAGNET	ENV1336
	20	BELT	ENT1023
	21	SPRING	EBH1424
	22	SPRING	EBH1401
	23	SPRING	EBH1203
	24	SPRING	EBH1402
	25	.....	
	26	SPRING	EBH1406
	27	SPRING	EBH1407
	28	SPRING	EBH1408
	29	.....	
	30	SPRING	EBH1409
	31	SPRING	EBH1410
	32	SPRING	EBH1256
	33	SPRING	EBL1013
	34	SPRING	EBL1014
	35	MOTOR UNIT	EXA1241
	36	SWITCH (Detect)	ESN1009
	37	SWITCH (Mode)	ESN1010
	38	SOLENOID	EXP1005
	39	HALL IC	DN6847SE
	40	SUB COMPLEX PCB	ENX1019
	41	CONNECTOR (15P)	EKS1012
	42	LEAD WIRE (4P)	EDD1003
	43	CONNECTOR (5P)	EDE1008
	44	SCREW (AZIMUTH)	EBA1020
	45	.....	

Mark	No.	Description	Parts No.
	46	SCREW (M2×8)	ATZ20P080FMC
	47	SCREW	BSZ20P050FMC
	48	SCREW	PMS26P025FUC
	49	WASHER	EBF1008
	50	WASHER	EBF1009
	51	WASHER	EBF1010
	52	WASHER	EBF1011
	53	.....	
	54	ARM UNIT	EXX1006
	55	ARM UNIT	EXX1003
	56	R/P HEAD ASSEMBLY	EXX1013
	57	ARM	ENC1289
	58	HEAD BASE UNIT	EXA1230
	59	.....	
NSP	60	BRACKET	ENC1284
NSP	61	PLATE	ENC1285
NSP	62	BRACKET	ENC1289
	63	.....	
NSP	64	HOLDER	ENV1161
NSP	65	HOLDER	ENV1301
NSP	66	GEAR	ENV1177
NSP	67	R/P HEAD UNIT	EXA1234
NSP	68	SCREW	JGZ14P085FNI
NSP	69	SCREW	JGZ14P040FNI
NSP	70	CHASSIS UNIT	.....

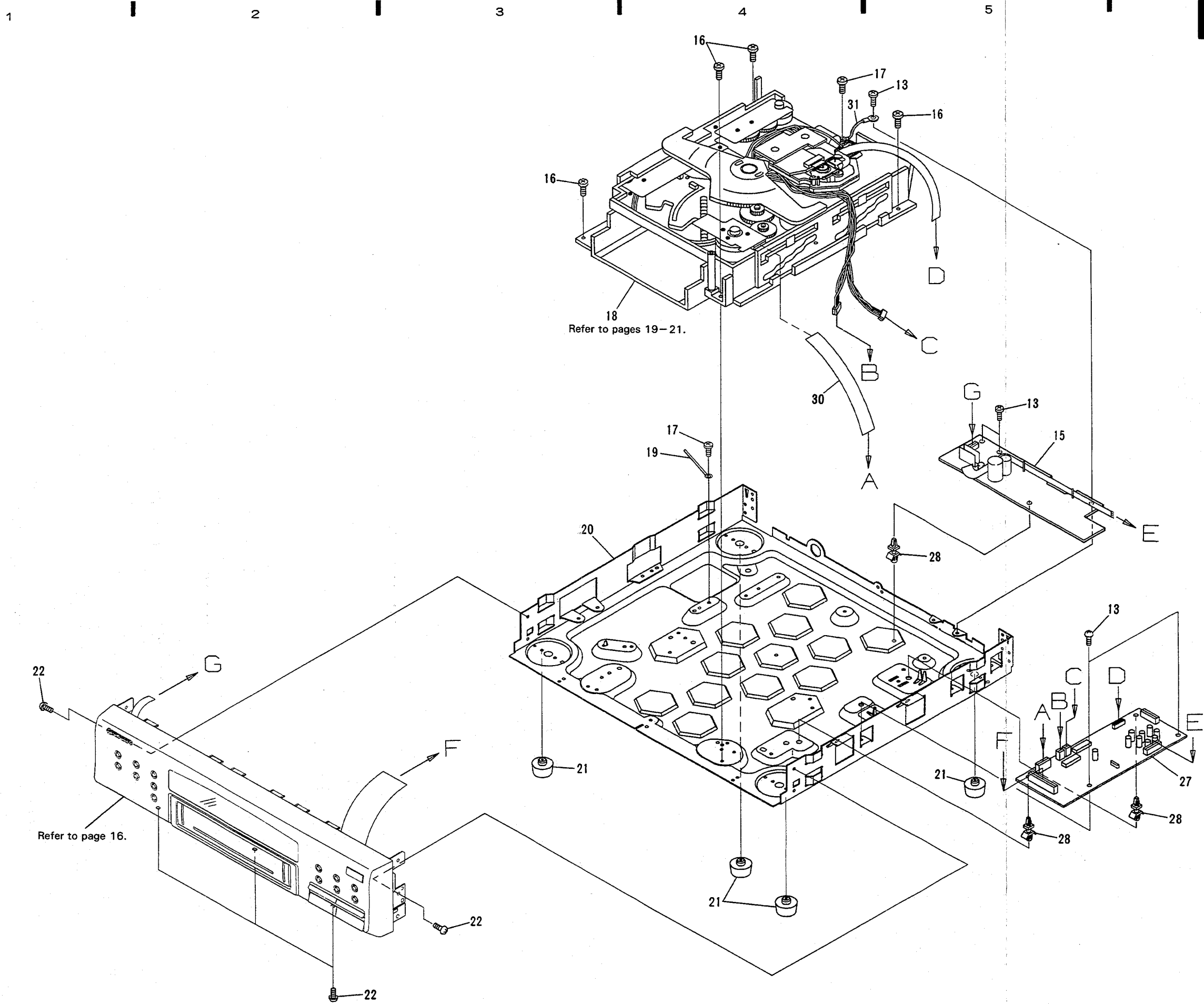
2.2 CD BLOCK

2.2.1 Multi CD Unit (For XD-J215M)

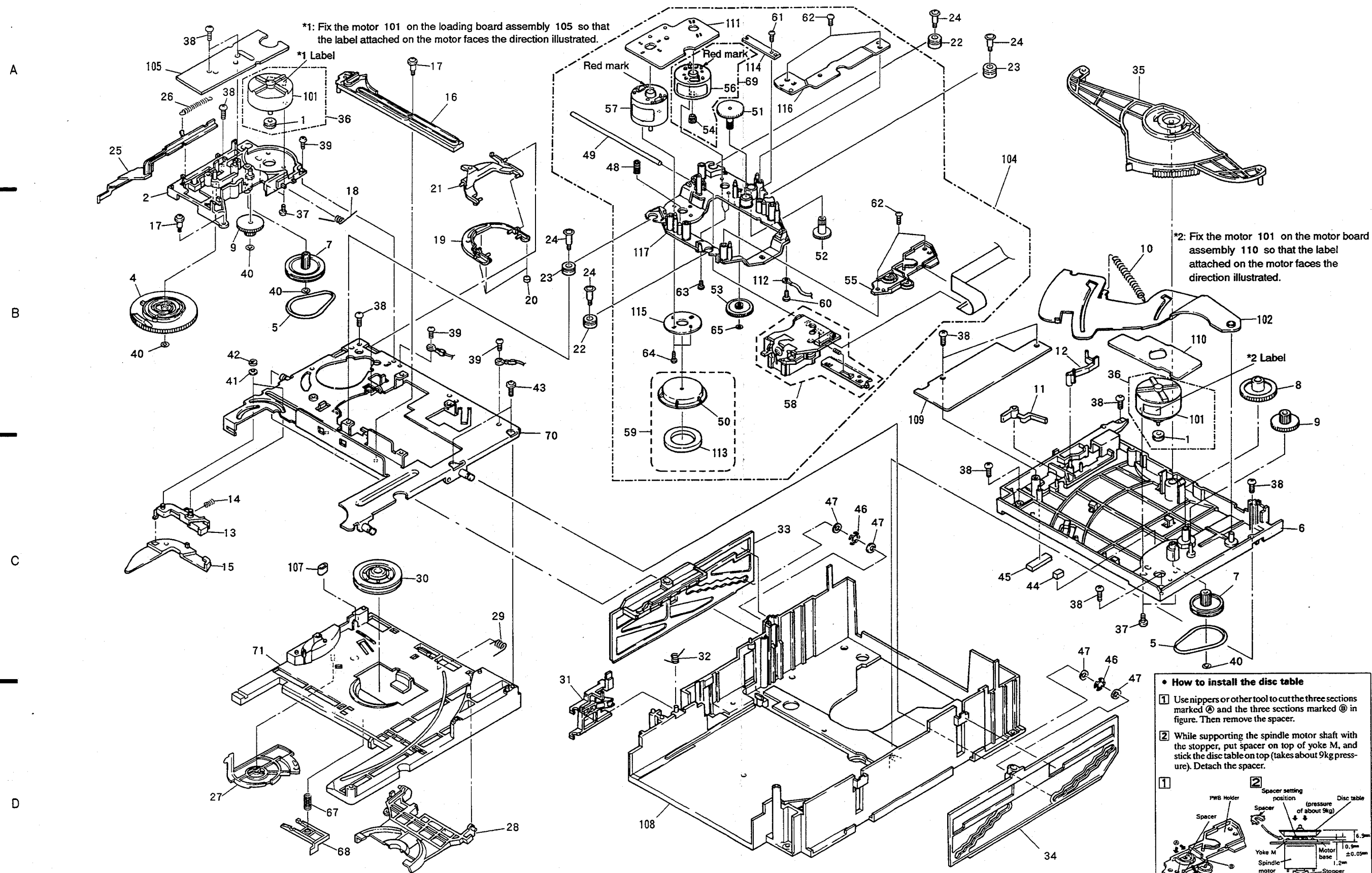


Parts list

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	FUNCTION PANEL ASSEMBLY	PEA1270	21	FOOT ASSEMBLY	PXA1201	
	2	NAME PLATE	AAM1047	22	SCREW	BBZ30P080FCC	
	3	DISPLAY WINDOW	PAM1595	23	.....		
	4	DOOR	PNW2267	24	.....		
	5	DOOR SPRING	PBH1022	25	.....		
	6	.....		26	.....		
	7	MODE BUTTON	PAC1706	27	MOTHER BOARD ASSEMBLY	PWM1728	
	8	.....		NSP 28	PCB HOLDER	PNW2100	
	9	DISPLAY BOARD ASSEMBLY	PWZ2443	NSP 29	FUNCTION PANEL	PNW2327	
	10	CONTROL BUTTON	PAC1705	NSP 30	FLAT CABLE	D20PYY0615	
	11	22P F • F • C/30V	PDD1114	NSP 31	EARTH LEAD	XDF-503	
	12	SCREW	PPZ30P080FMC				
	13	SCREW	BBZ30P060FCC				
	14	.....					
	15	POWER BOARD ASSEMBLY	PWZ2442				
	16	SCREW	IBZ30P080FCC				
	17	SCREW	PDZ30P050FMC				
NSP	18	MULTI MECHA ASSEMBLY	PXA1469				
	19	CORD CLAMPER	RNH-184				
NSP	20	UNDER BASE	PNA1967				



2.2.2 Multi Mecha Assembly

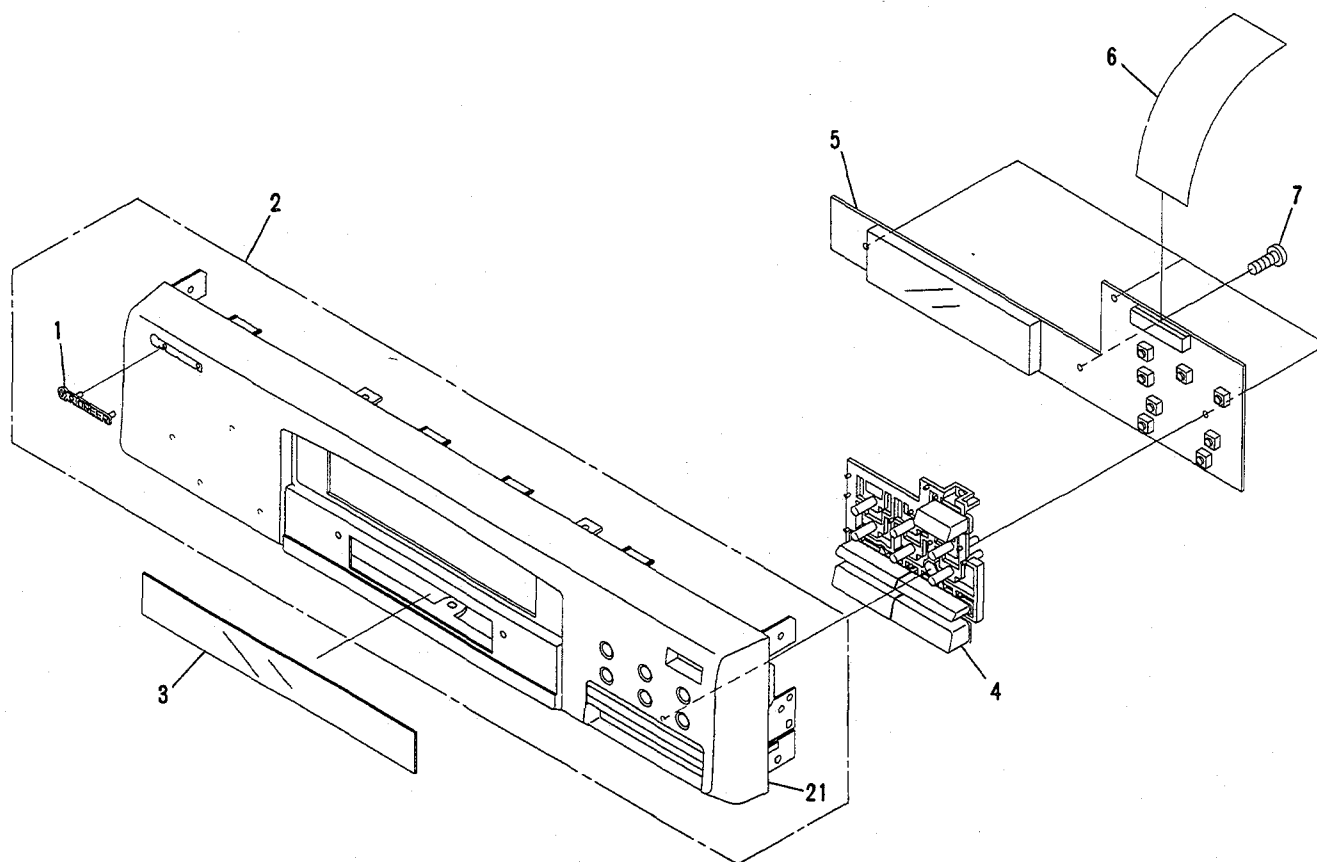


Parts list

Mark	No.	Description	Part No.
	1	Motor pulley	PNW1634
	2	Gear holder	PNW1929
	3	• • • • •	
	4	Cam gear	PNW1923
	5	Belt	PEB1138
	6	Top guide	PNW2061
	7	Gear pulley	PNW1918
	8	Gear S	PNW1919
	9	Gear L	PNW1920
	10	Eject spring	PBH1107
	11	Switch lever	PNW1927
	12	Seven bar	PNW1931
	13	Sub rotary lever	PNW1933
	14	Sub rotary lever spring	PBH1111
	15	Rotary lever	PNW1932
	16	Drive plate	PNW1930
	17	Motor screw	PBA - 112
	18	Holder lever spring	PBH1110
	19	Disc holder	PNW1924
	20	Cushion A	PED1001
	21	Holder lever	PNW1925
	22	Float rubber	PEB1014
	23	Float rubber	PEB1132
	24	Float screw	PBA1073
	25	Release lever	PNW1934
	26	Release spring	PBH1106
	27	Clamper cam	PNW1922
	28	Clamper holder	PNW1921
	29	Clamper spring	PBH1109
	30	Clamper	PNW1857
	31	Lock lever	PNW1917
	32	Lock spring	PBH1108
	33	Stair L	PNW1915
	34	Stair R	PNW1916
	35	Synchronize lever	PNW1926
	36	Motor assembly (LOADING, DISC SELECT)	PEA1130
	37	Screw	PMZ26P040FMC
	38	Screw	PPZ30P080FMC
	39	Screw	BBZ30P060FMC
	40	Washer	WT26D047D025
	41	Washer	WA31D054D025
	42	E ring	Z39 - 010
	43	Screw	IPZ30P080FMC
	44	Rubber spacer	PEB1238
	45	Rubber spacer	PEB1179
	46	Silent ring	PBK1093
	47	Washer	WA62D130D025
	48	Earth spring	PBH1132

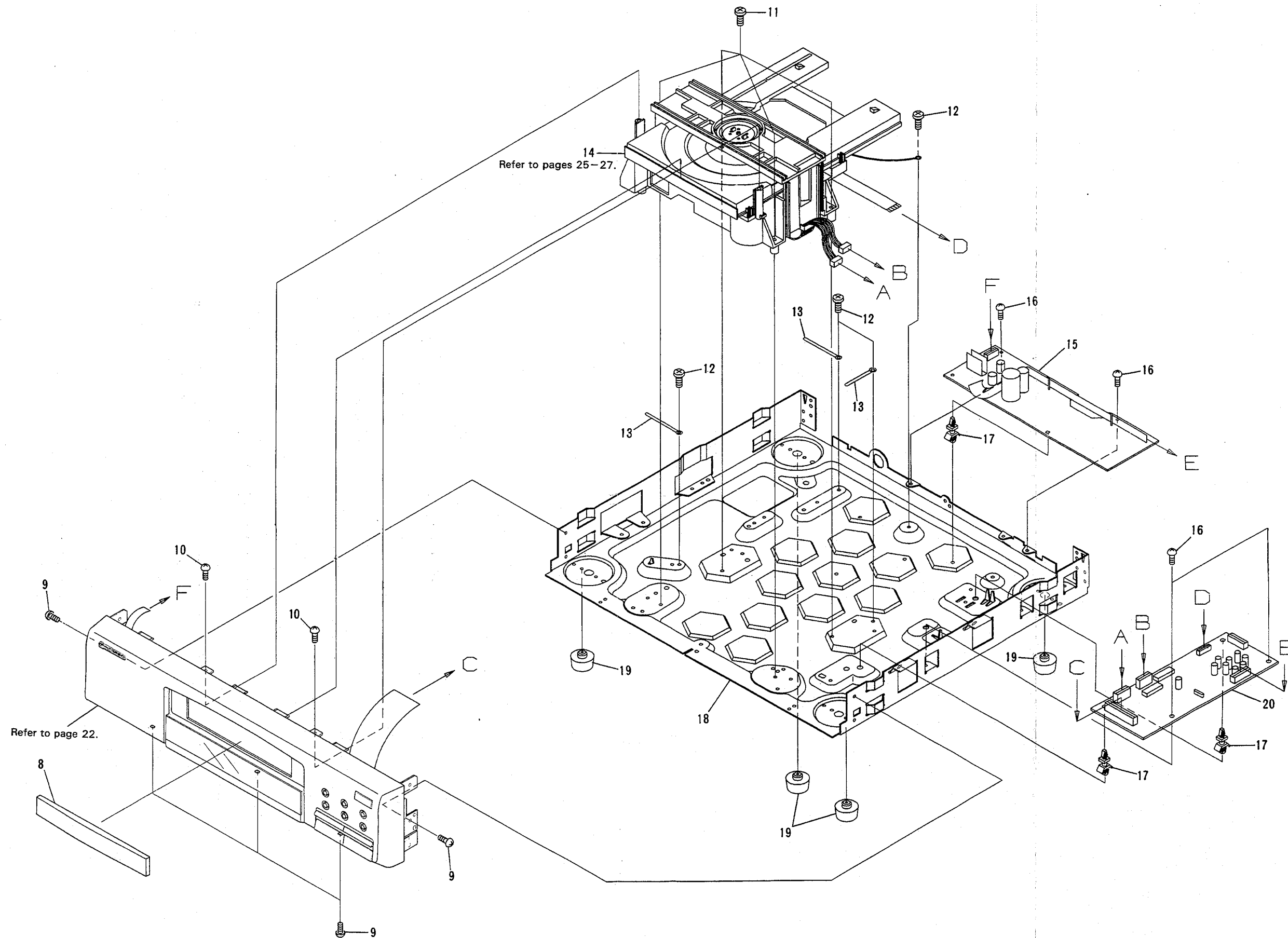
Mark	No.	Description	Part No.
	49	Guide bar	PLA1094
	50	Disc table	PNW1067
	51	Gear 1	PNW2052
	52	Gear 2	PNW2053
	53	Gear 3	PNW2054
	54	Pinion gear	PNW2055
	55	PWB holder	PNW2057
	56	Carriage DC motor / 0.3W	PXM1027
	57	D.C. motor assembly (spindle, with oil)	PEA1235
	58	Pickup assembly	PEA1285
	59	Disc table assembly	PEA1035
	60	Screw	BBZ26P060FMC
	61	Screw	BPZ20P060FMC
	62	Screw	BPZ26P100FMC
	63	Screw	JFZ17P025FZK
	64	Screw	JFZ20P040FMC
	65	Washer	WT12D032D025
	66	• • • • •	
	67	Stopper spring	PBH1131
	68	Stopper	PNW2069
	69	D.C. motor assembly (CARRIAGE)	PEA1246
	70	Upper chassis	PNB1267
	71	Sub chassis	PNW2073
NSP	101	Motor	VXM1033
NSP	102	Eject lever	PNB1306
	103	• • • • •	
NSP	104	Servo mechanism assembly M	PXA1417
NSP	105	Loading board assembly	PWZ2038
	106	• • • • •	
NSP	107	Rubber tube	PEB1171
NSP	108	Main chassis	PNW2074
NSP	109	Select board assembly	PWZ2533
NSP	110	Motor board assembly	PWZ2040
NSP	111	Mechanism board assembly	PWX1192
NSP	112	Earth lead unit	PDF1074
NSP	113	Clamp magnet	PMF1014
NSP	114	Gear stopper	PNB1303
NSP	115	Yoke M	PNB1312
NSP	116	AV angle	PNB1405
	117	Carriage base	PNW2058

2.2.3 Single CD Unit (For XD-J210)

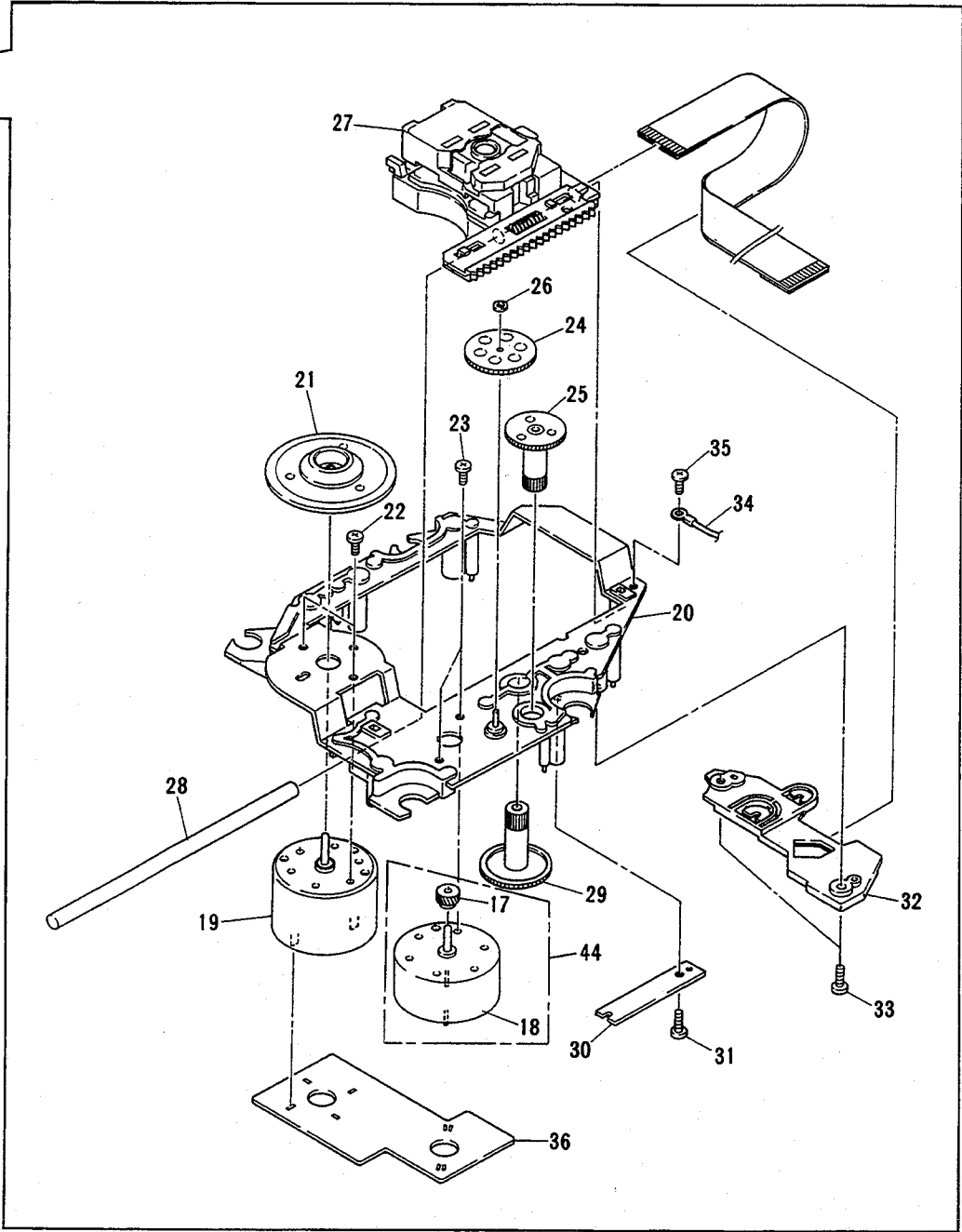
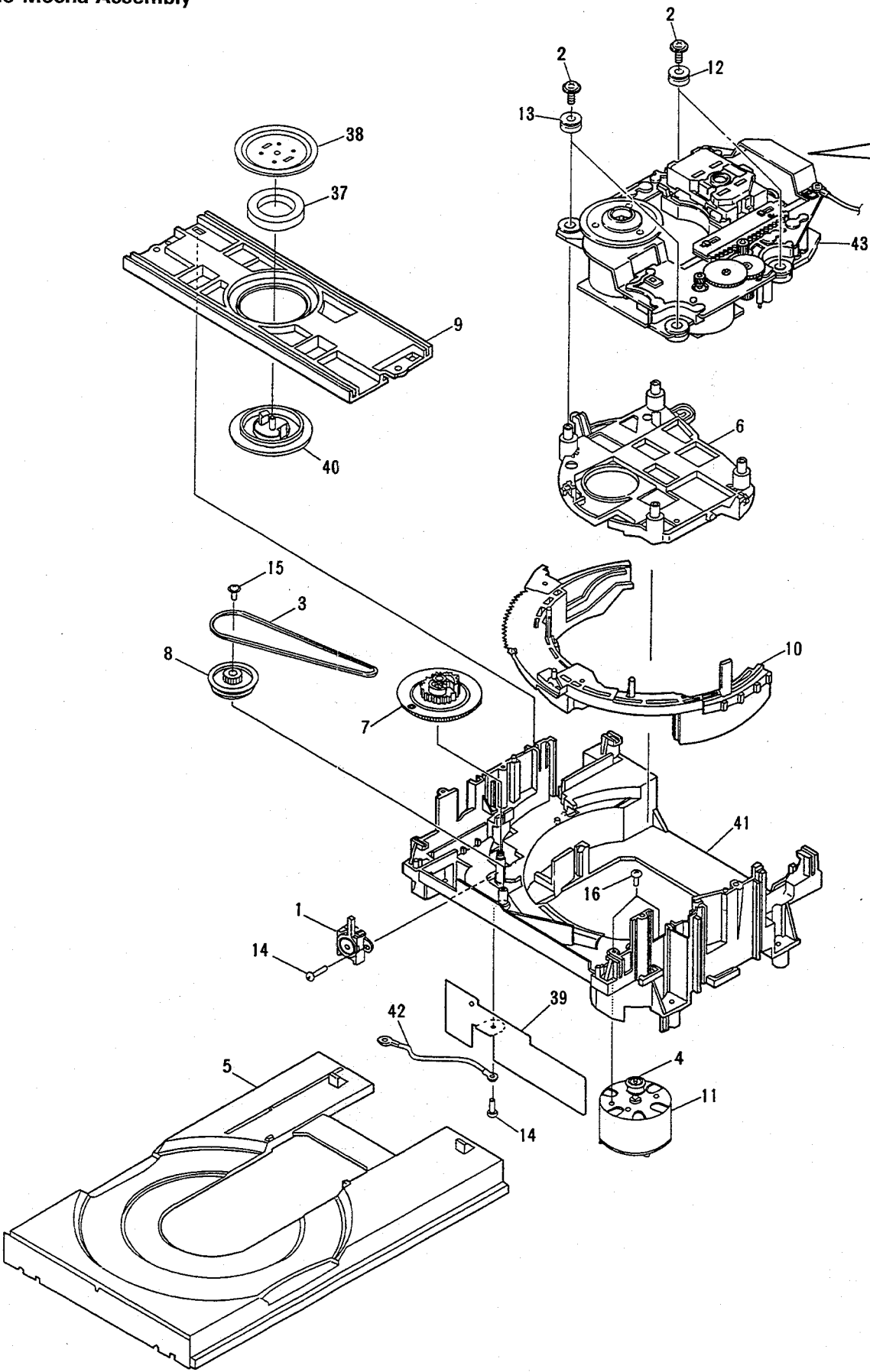


Parts list

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	NAME PLATE	AAM1047		11	SCREW	BBZ30P160FMC
	2	FUNCTION PANEL ASSEMBLY	PEA1272		12	SCREW	PDZ30P050FMC
	3	DISPLAY WINDOW	PAM1594		13	CORD CLAMPER	RNH-184
	4	CONTROL BUTTON	PAC1705	NSP	14	SINGLE MECHA ASSEMBLY	PXA1495
	5	DISPLAY BOARD ASSEMBLY	PWZ2433		15	POWER BOARD ASSEMBLY	PWZ2437
	6	24P F.F.C/30V	PDD1113		16	SCREW	BBZ30P060FCC
	7	SCREW	PPZ30P080FMC	NSP	17	PCB HOLDER	PNW2100
	8	NAME PLATE	PNW2234	NSP	18	UNDER BASE	PNA1967
	9	SCREW	BBZ30P080FCC		19	FOOT ASSEMBLY	PXA1201
	10	SCREW	PPZ30P120FMC		20	MOTHER BOARD ASSEMBLY	PWM1729
				NSP	21	FUNCTION PANEL	PNW2325



2.2.4 Single Mecha Assembly



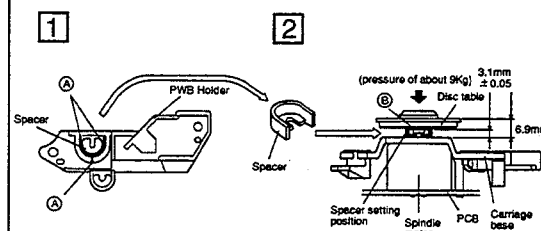
Parts list

Mark	No.	Description	Part No.
	1	Lever switch (CLAMP)	DSK1003
	2	Float screw	PBA1048
	3	Rubber belt	PEB1193
	4	Motor pulley	PNW1634
	5	Tray	PNW2290
	6	Float base	PNW2032
	7	Drive gear	PNW2266
	8	Gear pulley	PNW2034
	9	Clamper base	PNW2035
	10	Clamp cam	PNW2036
	11	DC motor/0.75W (LOADING)	PXM1010
	12	Float rubber	PEB1014
	13	Float rubber	PEB1132
	14	Screw	BPZ26P080FMC
	15	Screw	Z39 - 018
	16	Screw	PMZ26P040FMC
	17	Pinion gear	PNW2055
	18	DC motor (CARRIAGE)	PXM1027
	19	DC motor assembly (SPINDLE,with oil)	PEA1235
	20	Carriage base	PNW2058
	21	Disc table	PNW1068
	22	Screw	JFZ20P030FNI
	23	Screw	JFZ17P025FZK
	24	Gear 3	PNW2054
	25	Gear 2	PNW2053
	26	Washer	WT12D032D025
	27	Pickup assembly	PEA1179
	28	Guide bar	PLA1094
	29	Gear 1	PNW2052
NSP	30	Gear stopper	PNB1303
	31	Screw	BPZ20P060FMC
	32	PWB holder	PNW2057
	33	Screw	BPZ26P100FMC
NSP	34	Earth lead unit	PDF1104
	35	Screw	BBZ26P060FMC
NSP	36	Mechanism board assembly	PWX1192
NSP	37	Clamp magnet	PMF1014
NSP	38	Yoke	PNB1216
NSP	39	Shield plate	PNB1317
NSP	40	Clamper S	PNW1609
NSP	41	Loading base	PNW2030
NSP	42	Earth lead unit	XDF - 502
NSP	43	Servo mechanism assembly	PXA1478
	44	DC motor assembly (CARRIAGE)	PEA1246

• How to install the disc table

1 Use nipper or other tool to cut the three sections marked (A) figure 1. Then remove the spacer.

2 While supporting the spindle motor shaft with the stopper, put spacer on top of the motor base (angled so it doesn't touch section (B)), and stick the disc table on top (takes about 9Kg pressure). Take off the spacer.

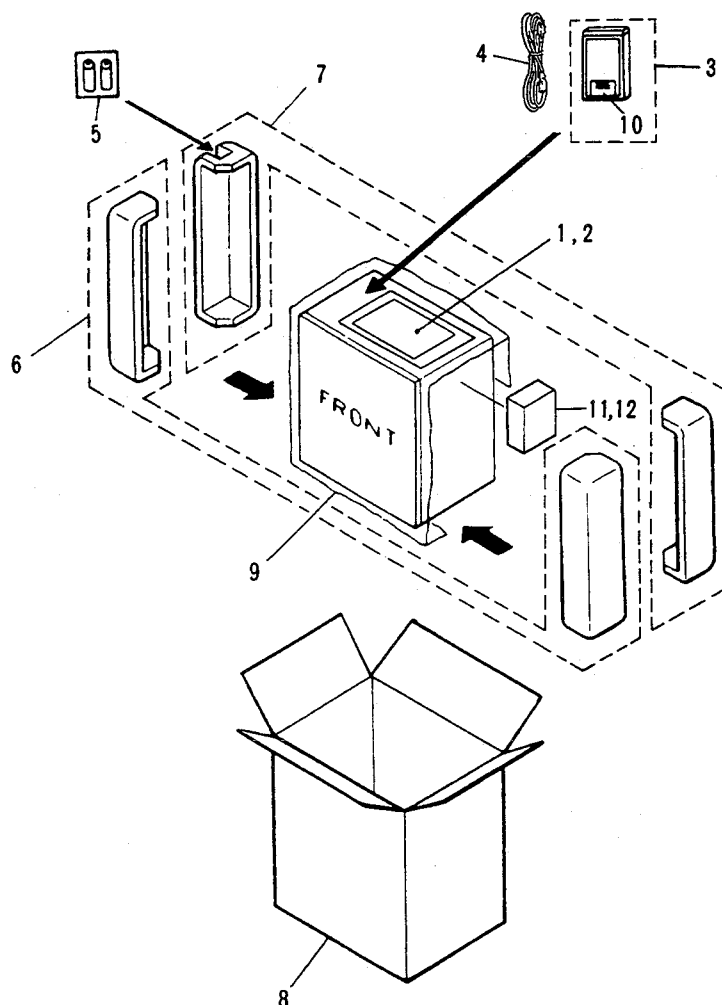


XD-J215M, XD-J210

2.3 PACKING

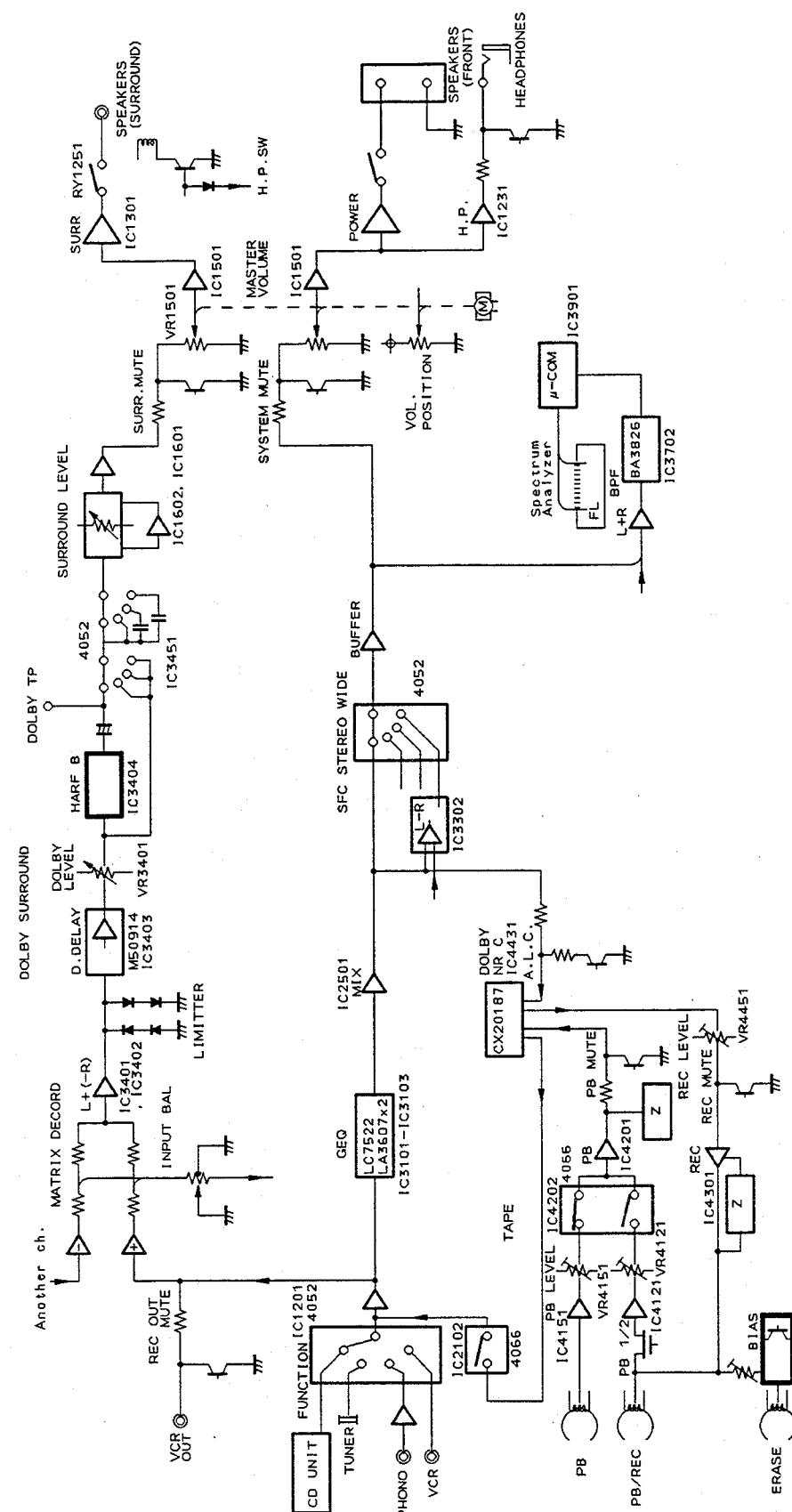
Parts list

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	OPERATING INSTRUCTIONS (English, French, German, Italian) (For XD-J215M)	ARE1266		6	FRONT PAD L, R	AHA1559
	1	OPERATING INSTRUCTIONS (English, French, German, Italian) (For XD-J210)	ARE1264		7	REAR PAD L, R	AHA1560
	2	OPERATING INSTRUCTIONS (Dutch, Swedish, Spanish, Portuguese) (For XD-J215M)	ARE1267		8	PACKING CASE (For XD-J215M)	AHD2505
	2	OPERATING INSTRUCTIONS (Dutch, Swedish, Spanish, Portuguese) (For XD-J210)	ARE1265		8	PACKING CASE (For XD-J210)	AHD2504
	3	REMOTE CONTROL UNIT (CU-XD001)	AXD1326	NSP	9	PACKING SHEET	AHG1151
	4	AC POWER CORD	ADG1127		10	BATTERY COVER	AZN2235
NSP	5	BATTERY (R03, AAA)	AEX-021		11	PP CASE (XD-J215M only)	PYY1169
					12	MAGAGINE ASSEMBLY (XD-J215M only)	PXA1507



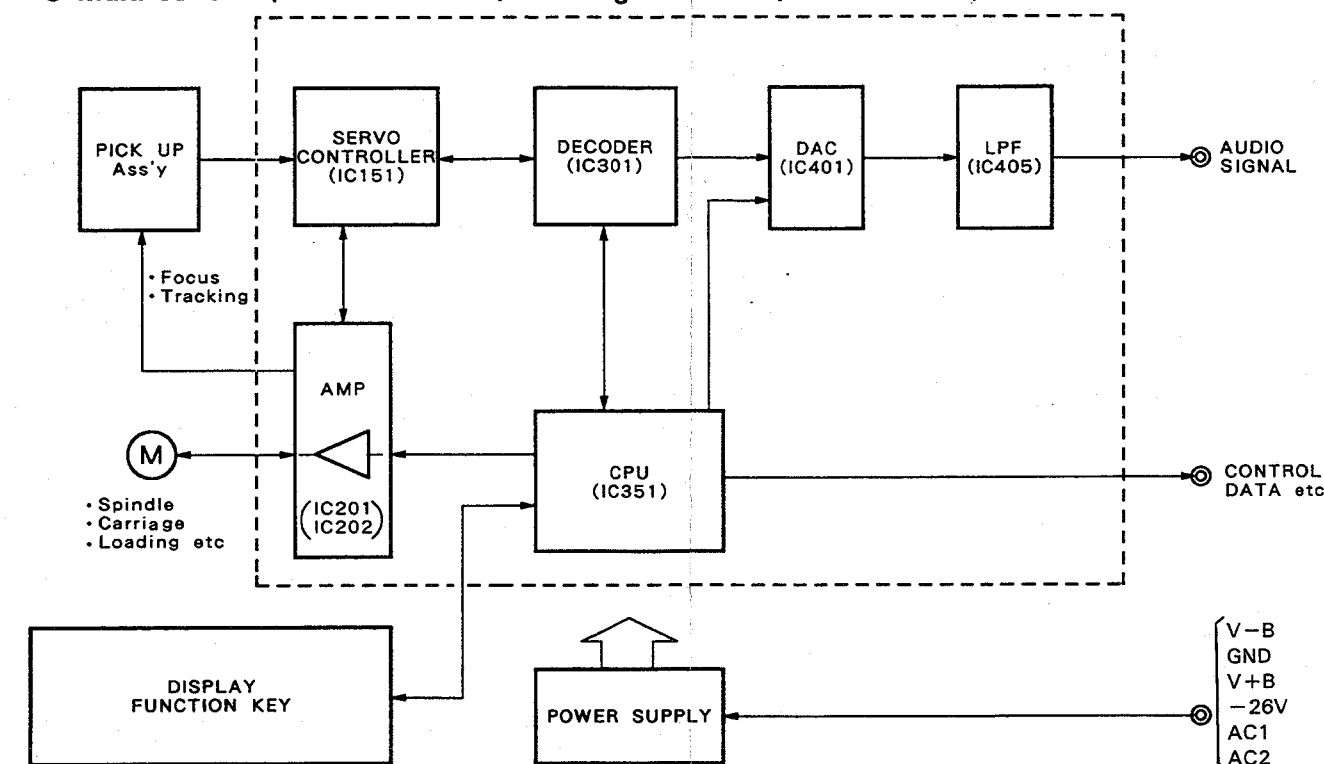
3. BLOCK DIAGRAM

3.1 DECK AMP BLOCK (For XD-J215M and XD-J210)



3.2 CD BLOCK

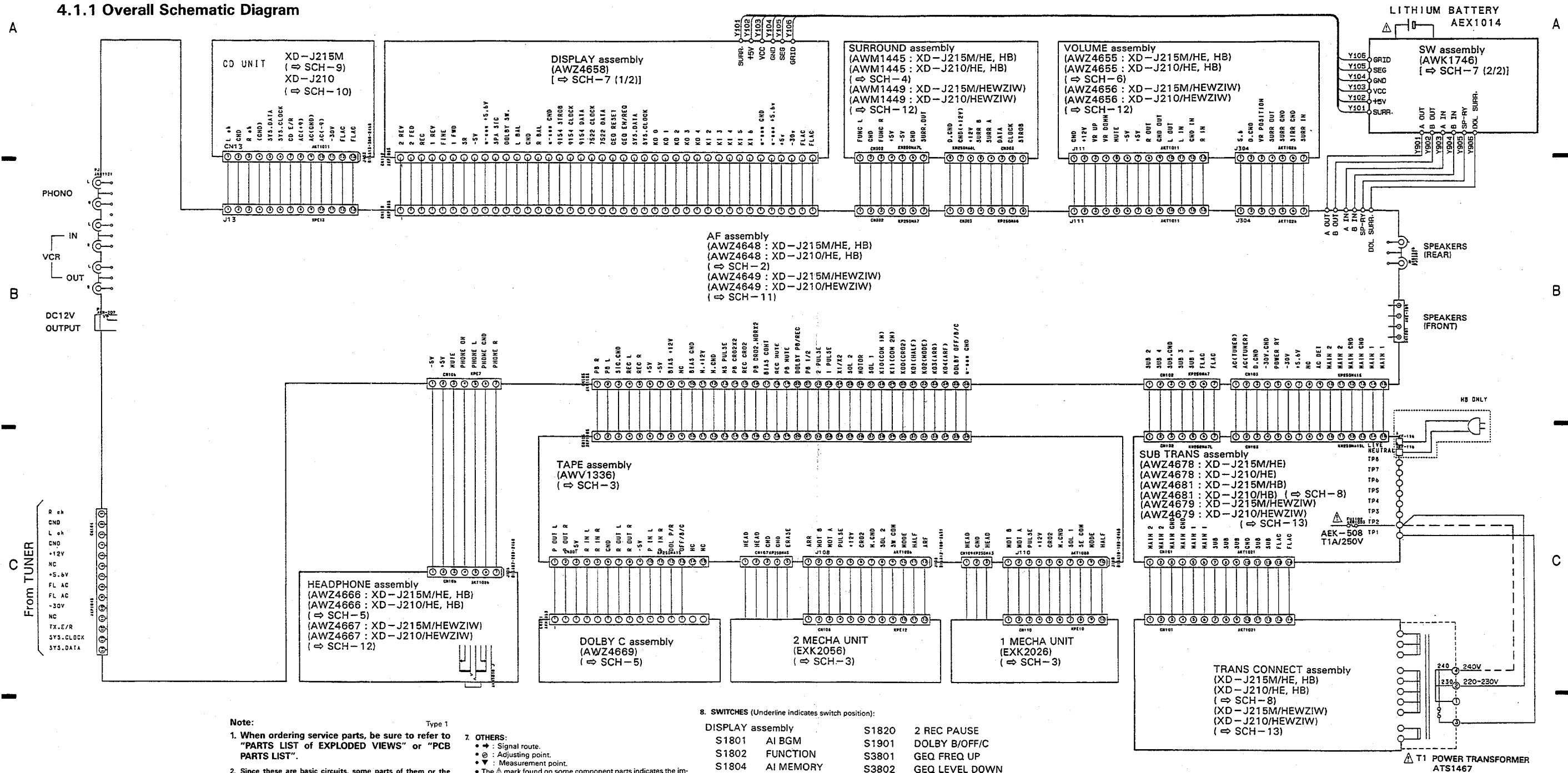
● Multi CD Unit (For XD-J215M) and Single CD Unit (For XD-J210)



4. SCHEMATIC AND PCB CONNECTION DIAGRAMS

4.1 DECK AMP BLOCK (For XD-J215M, XD-J210)

4.1.1 Overall Schematic Diagram



Note:

1. When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".

2. Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.

3. RESISTORS:
Unit: k: kΩ, M: MΩ, or Ω unless otherwise noted.
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.

4. CAPACITORS:
Unit: p: pF or μF unless otherwise noted.
Ratings: capacitor (μF)/voltage (V) unless otherwise noted.
Rated voltage: 50V except for electrolytic capacitors.

5. COILS:
Unit: m: mH or μH unless otherwise noted.

6. VOLTAGE AND CURRENT:
⊞: Signal voltage at rated output.
→: DC voltage (V) at no input signal unless otherwise noted.
Value in () is DC voltage at rated power.
⊙: mA or - mA: DC current at no input signal unless otherwise noted.

7. OTHERS:

⊞: Signal route.

⊙: Adjusting point.

⊞: Measurement point.

• The Δ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.

8. SWITCHES (Underline indicates switch position):

DISPLAY assembly	S1801	AI BGM	S1802	FUNCTION	S1804	AI MEMORY	S1805	POWER	S1806	1 REV	S1807	1 PLAY	S1808	1 STOP	S1809	2 REV	S1810	2 FF	S1811	1 REW	S1812	1 FF	S1813	2 STOP	S1814	2 REV	S1815	2 PLAY	S1816	COPY	S1818	2 REC MUTE	S1819	ASES	S1820	2 REC PAUSE	S1901	DOLBY B/OFF/C	S3801	GEQ FREQ UP	S3802	GEQ LEVEL DOWN	S3803	DOLBY SURROUND ON/OFF	S3804	REAR LEVEL UP	S3805	REAR LEVEL DOWN	S3806	SURROUND & WIDE	S3807	GEQ LEVEL UP	S3808	GEQ MODE	S3809	SOUND SELECTOR	S3810	PRESET/PGM	S3811	GEQ ON/OFF	S3813	SFC MOVIE/A	S3814	SFC DISCO/B	S3815	SFC HALL/C	S3816	SFC MEMO	S3817	SFC CLEAR
------------------	-------	--------	-------	----------	-------	-----------	-------	-------	-------	-------	-------	--------	-------	--------	-------	-------	-------	------	-------	-------	-------	------	-------	--------	-------	-------	-------	--------	-------	------	-------	------------	-------	------	-------	-------------	-------	---------------	-------	-------------	-------	----------------	-------	-----------------------	-------	---------------	-------	-----------------	-------	-----------------	-------	--------------	-------	----------	-------	----------------	-------	------------	-------	------------	-------	-------------	-------	-------------	-------	------------	-------	----------	-------	-----------

9. For SCH-□ on the schematic diagram

• SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)

Overall Schematic Diagram

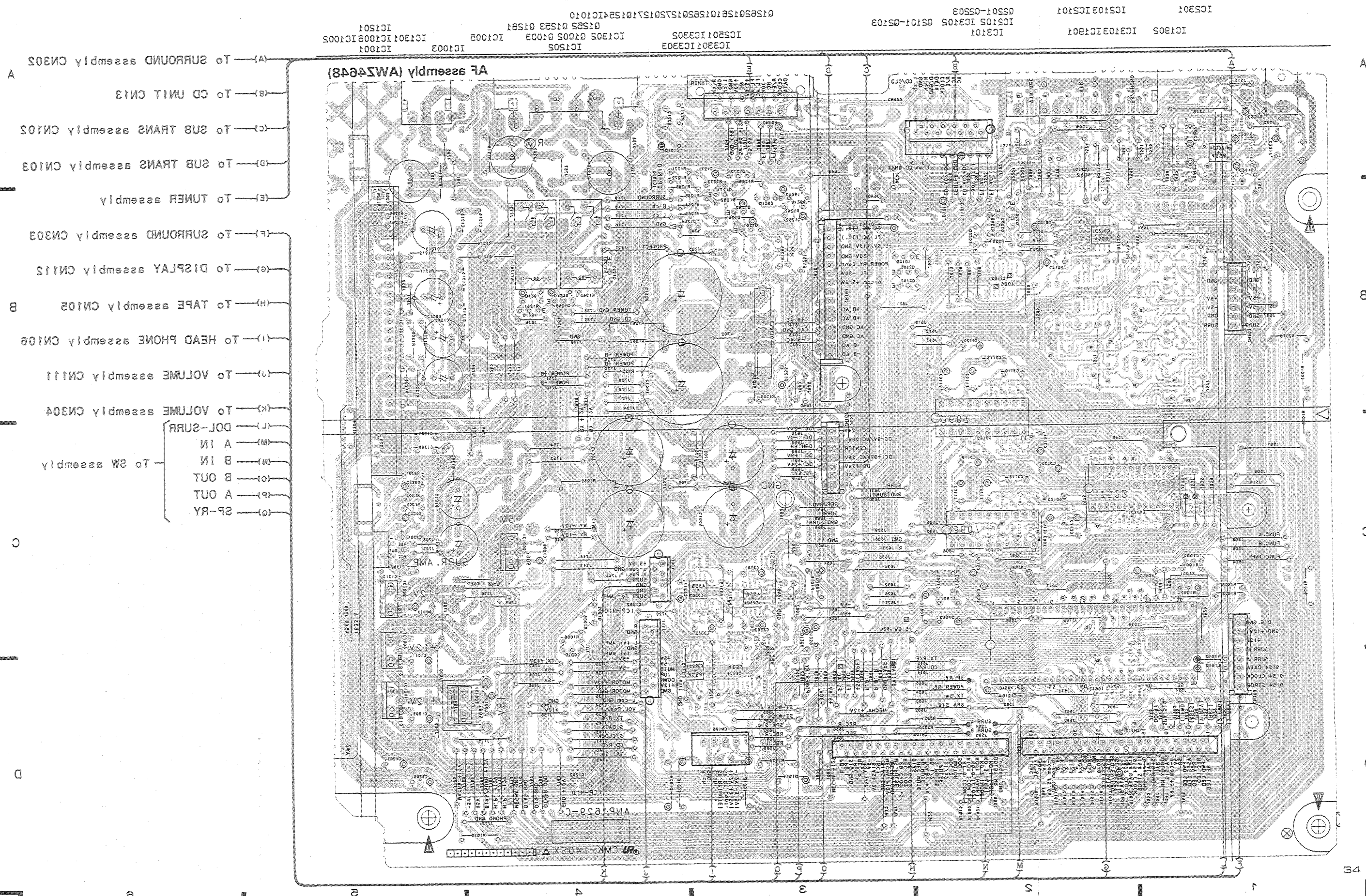
SCH-1

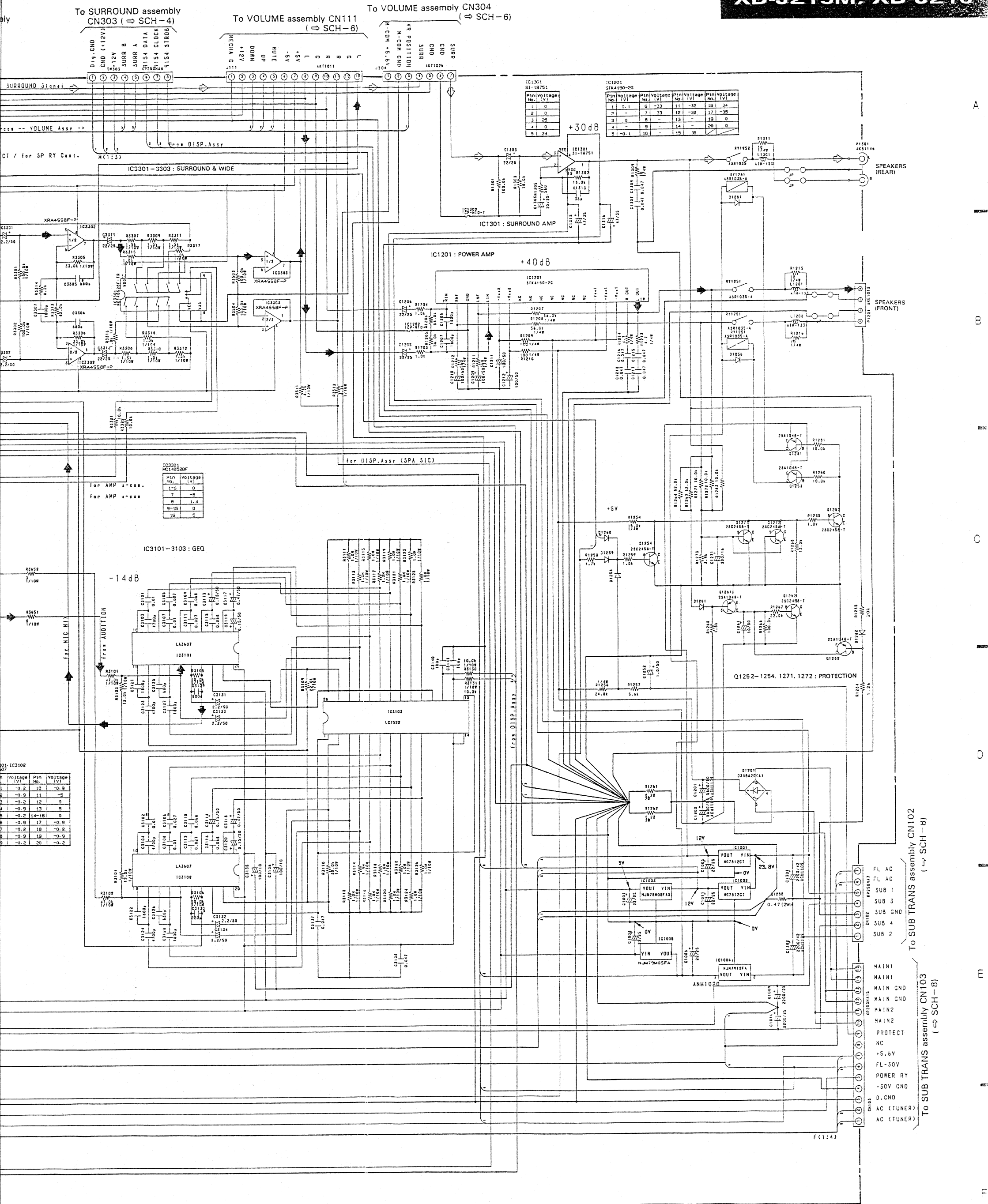
Overall Schematic Diagram

SCH-1

4.1.2 AF Assembly

This PCB connection diagram is viewed from the foil side.





XD-J215M, XD-J210

4.1.3 TAPE Assembly, 1 Mecha Unit and 2 Mecha Unit

A

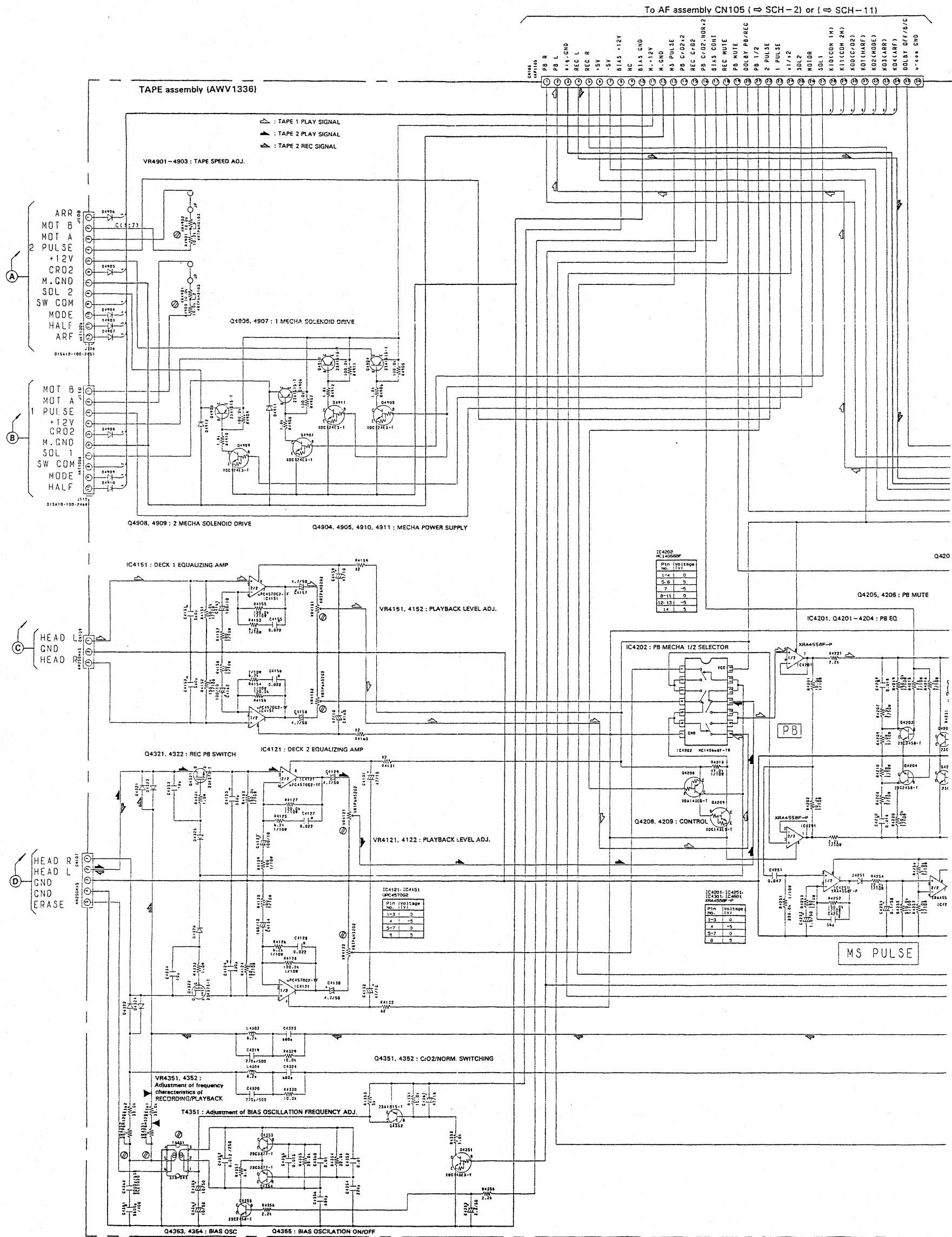
B

C

D

M

N



SCH-3

TAPE assembly
1 Mecha Unit
2 Mecha Unit

40

1

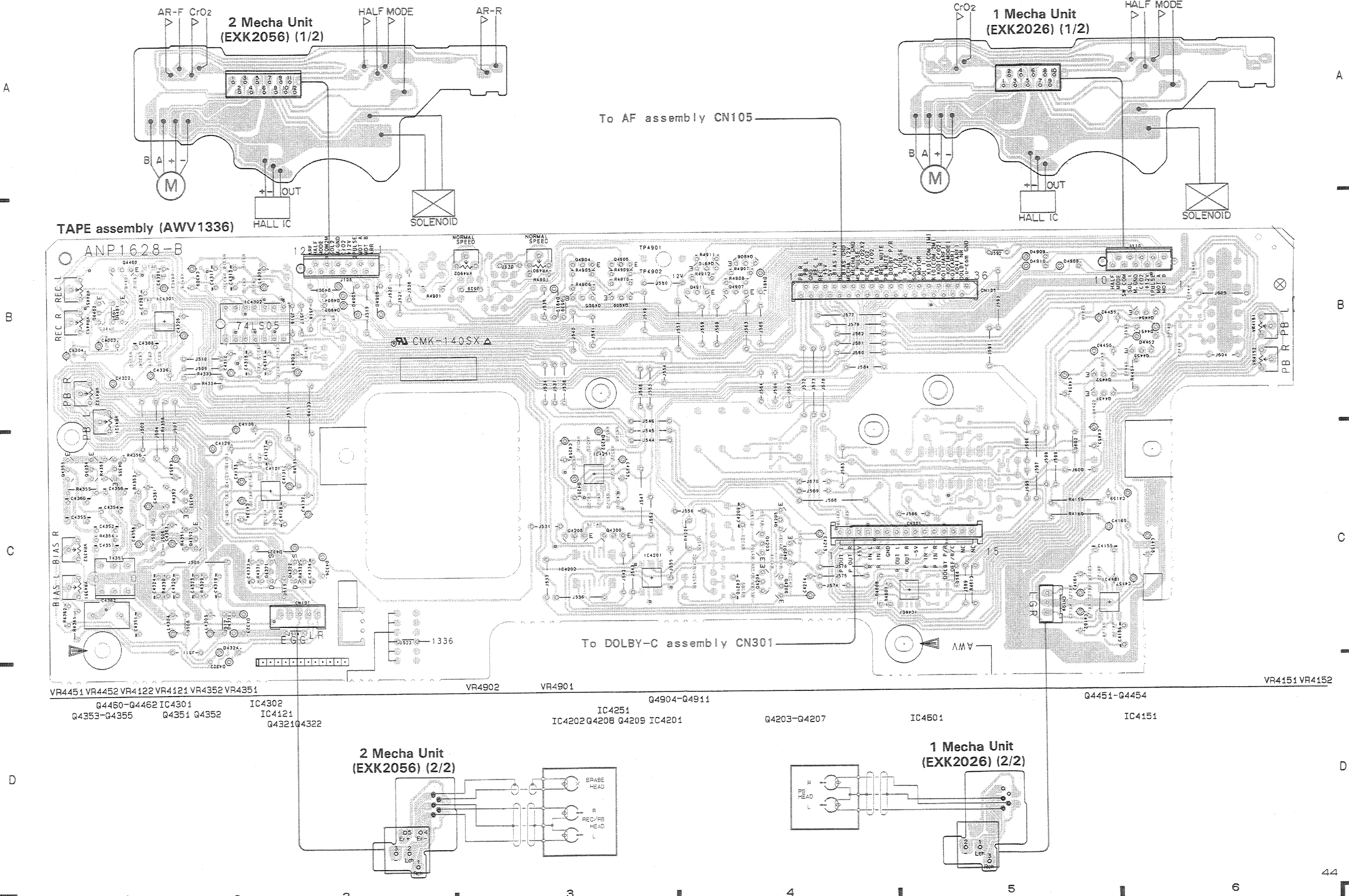
2

3

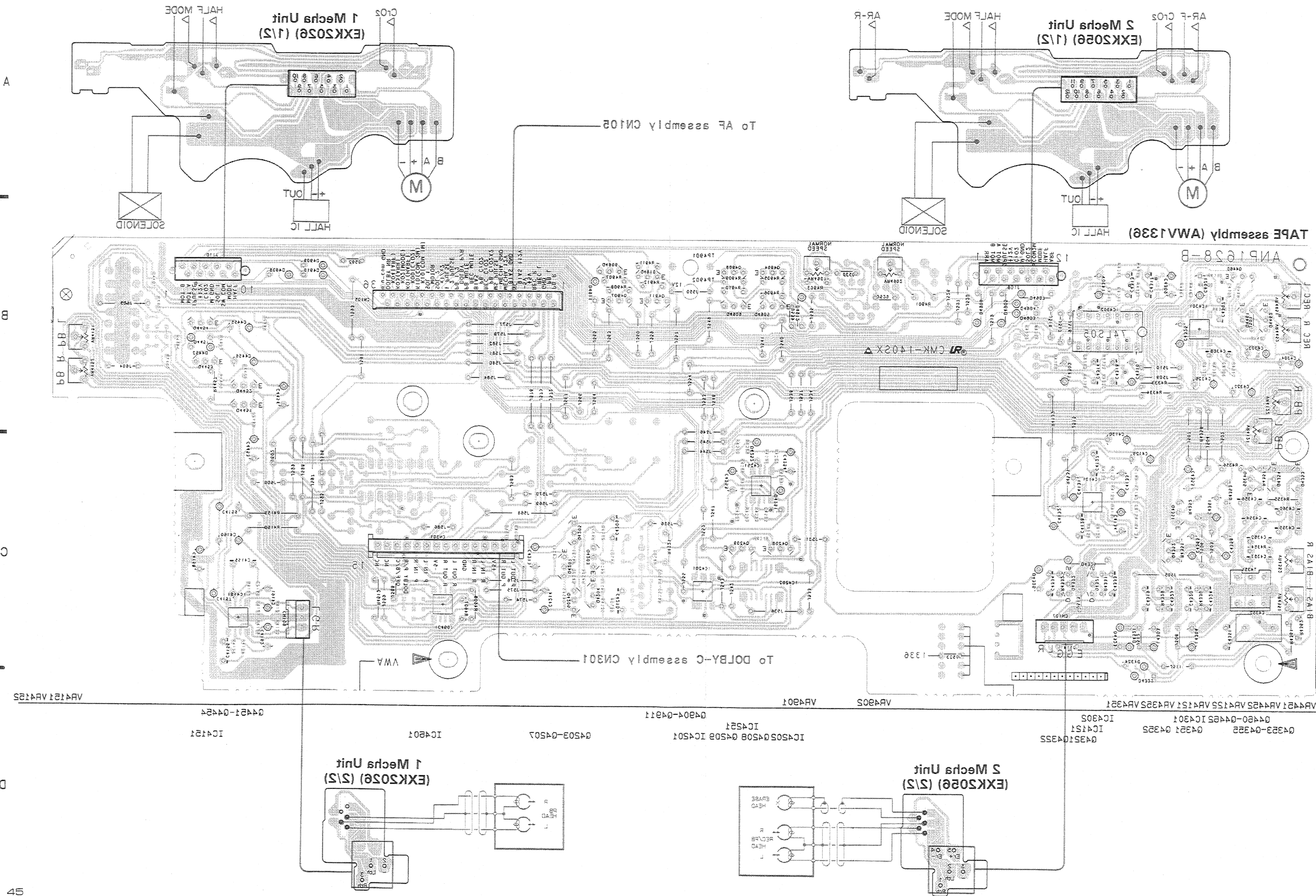
4

5

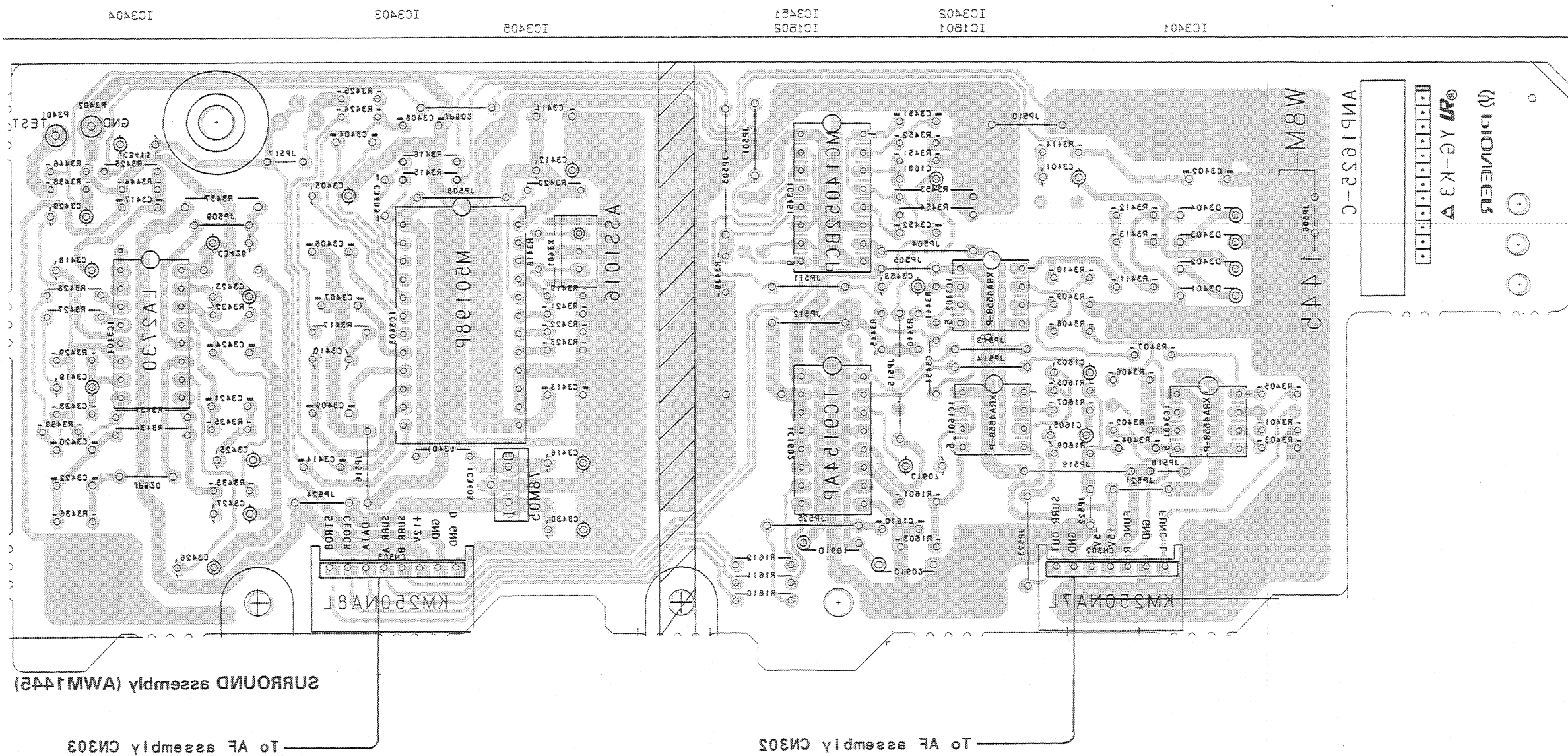
This PCB connection diagram is viewed from the parts mounted side.



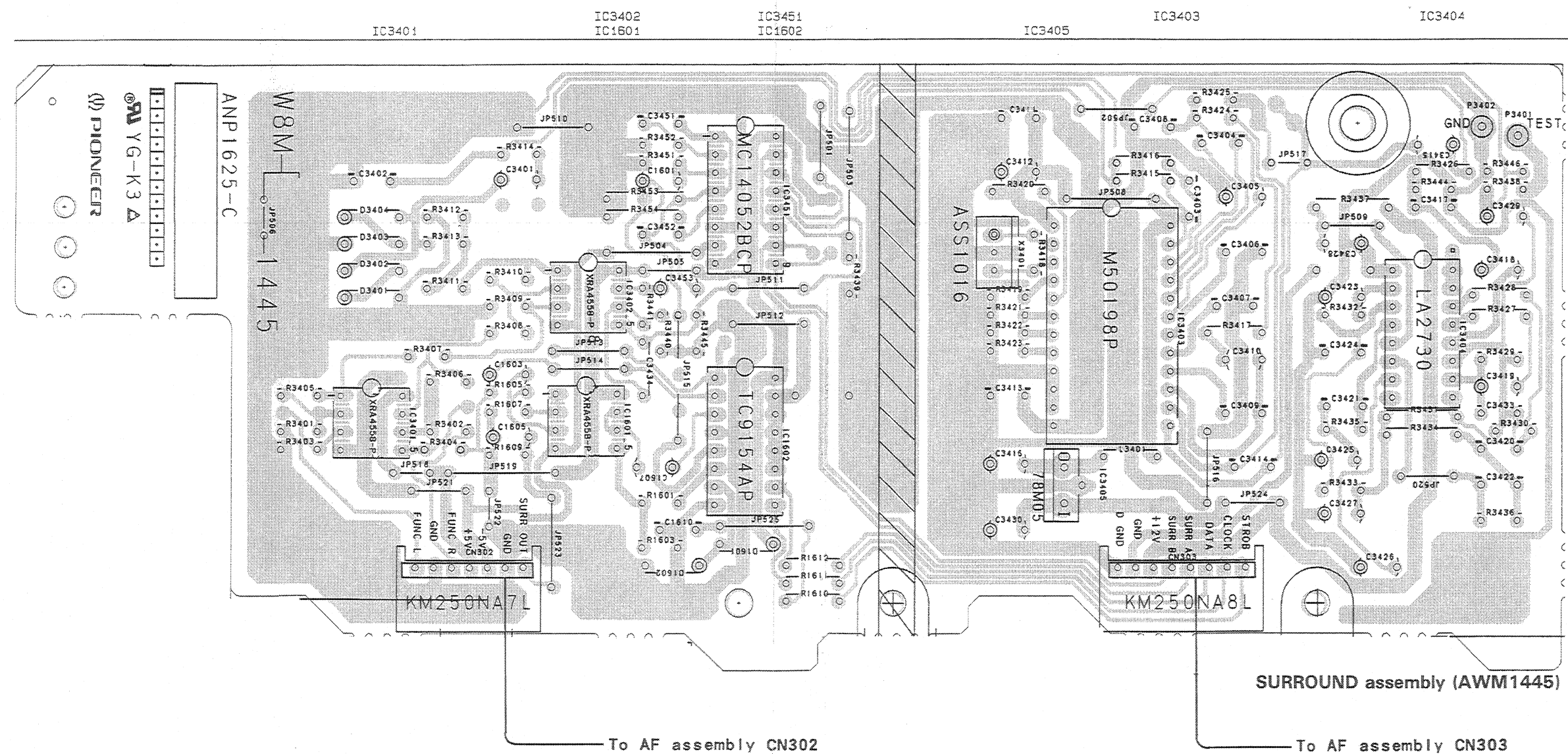
This PCB connection diagram is viewed from the foil side.

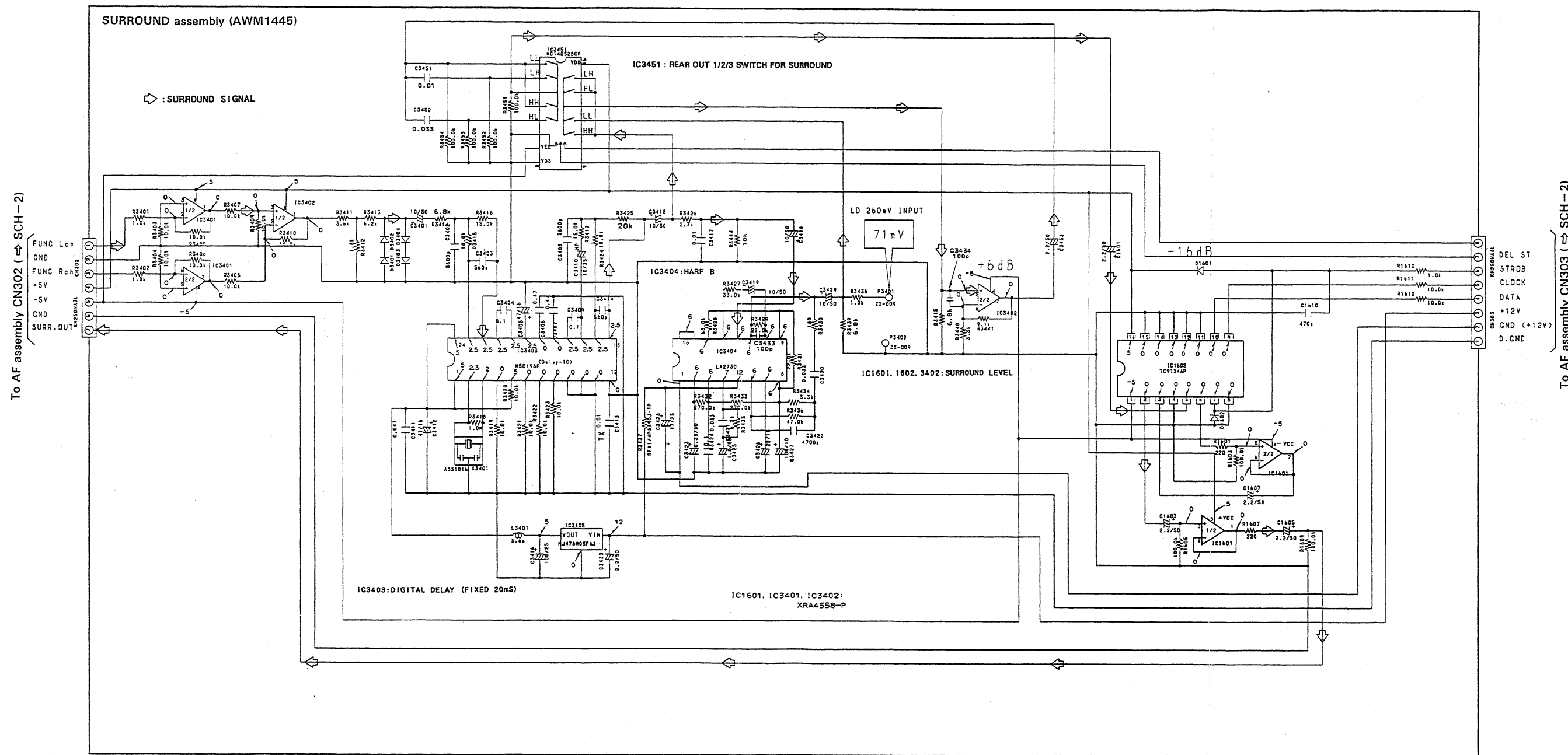


This PCB connection diagram is viewed from the foil side.



This PCB connection diagram is viewd from the parts mounted side.





SCH-4

SURROUND assembly

SCH-4

SURROUND assembly

3



3

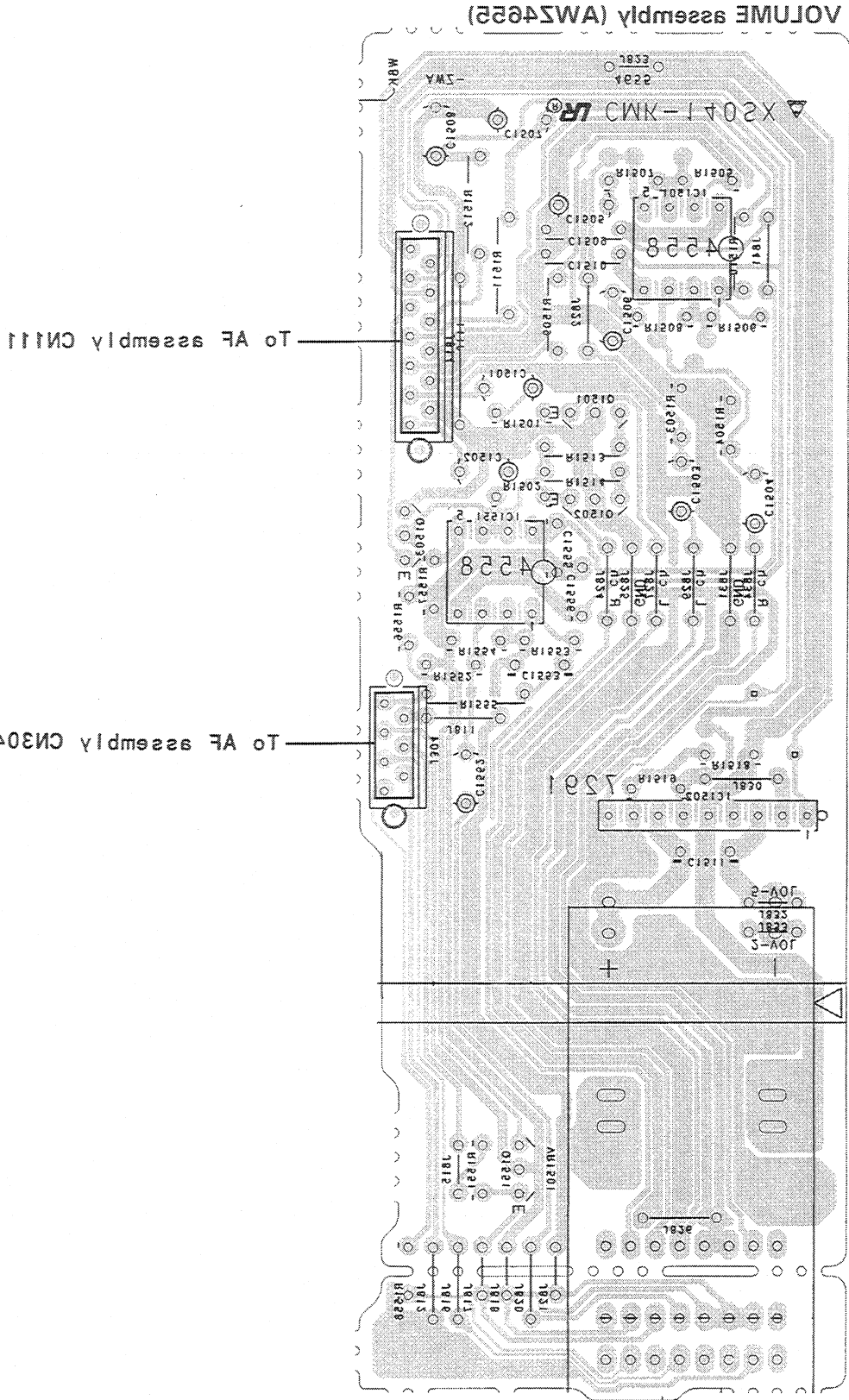
DOLBY-C assembly (AW5466a)



HEADPHONE assembly (AW54666)



7



This PCB connection diagram is viewed from the foil side.

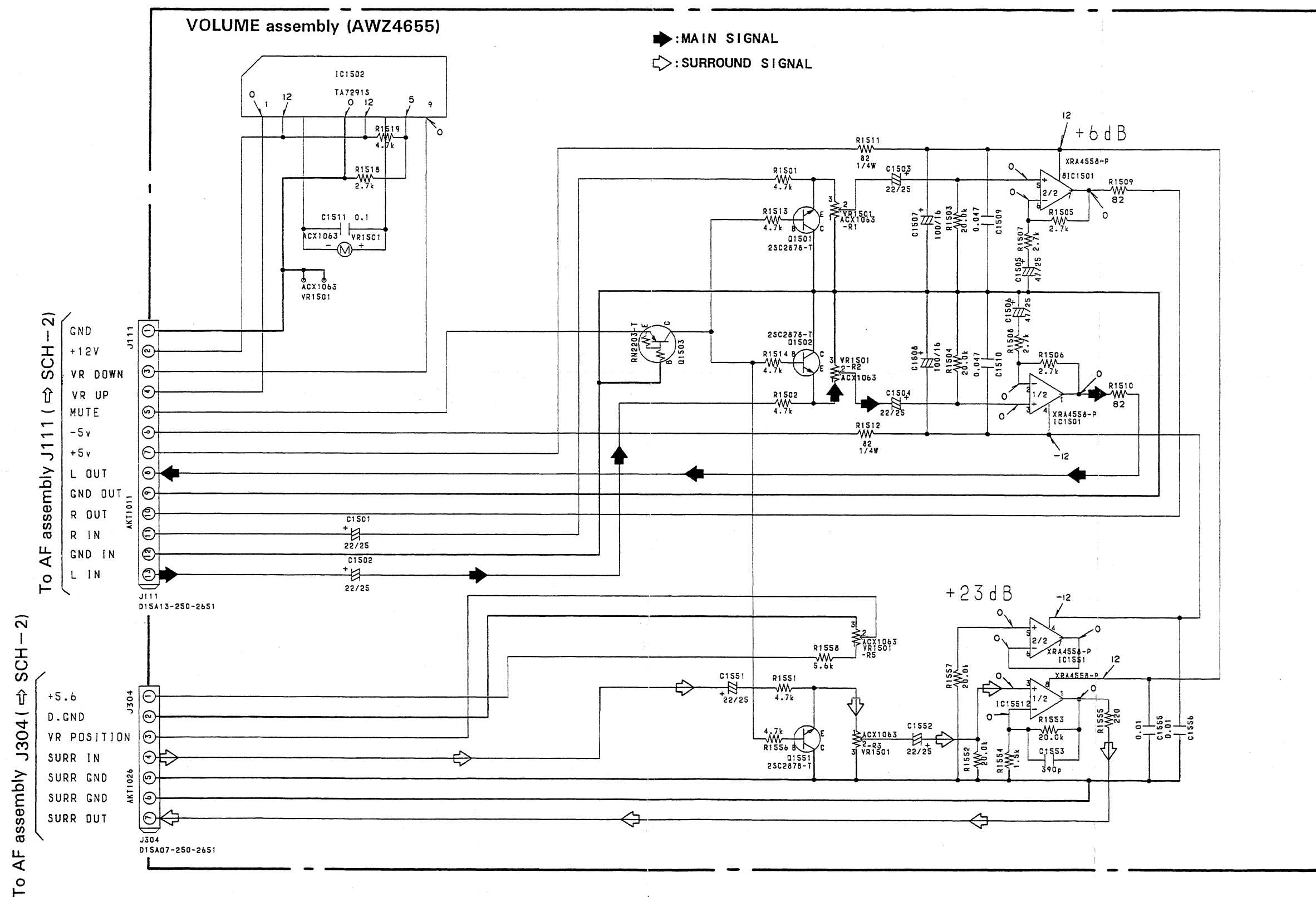
A

8



D

58



SCH-6

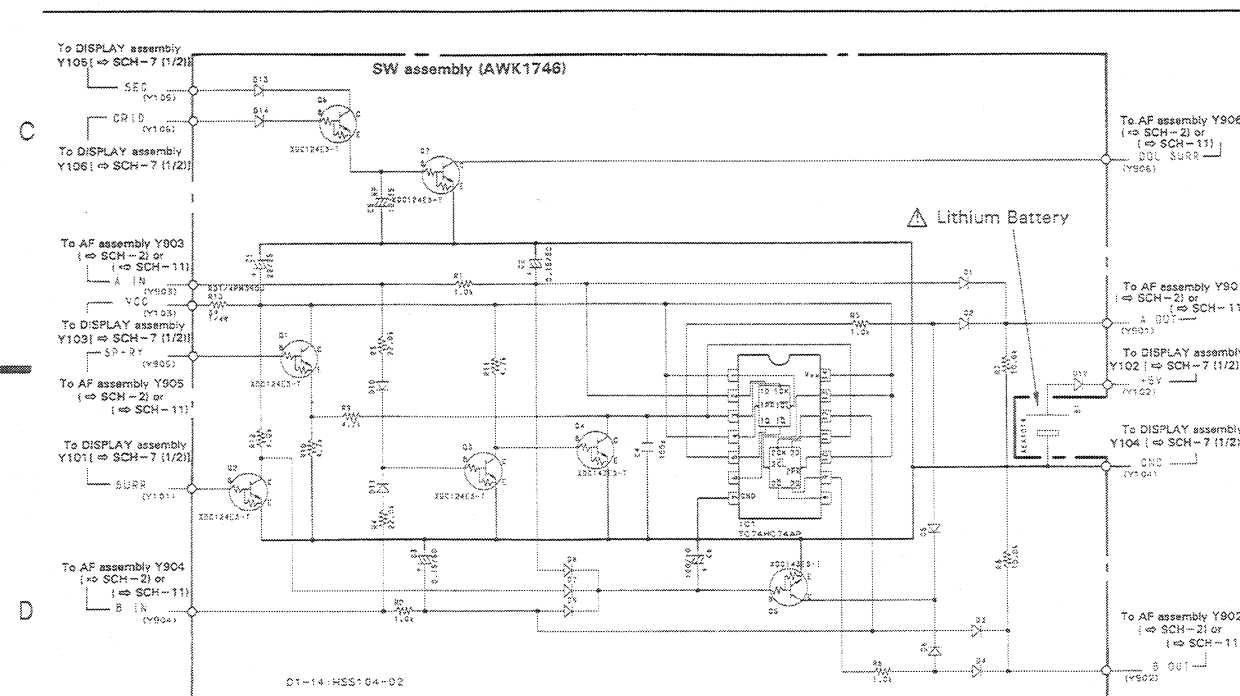
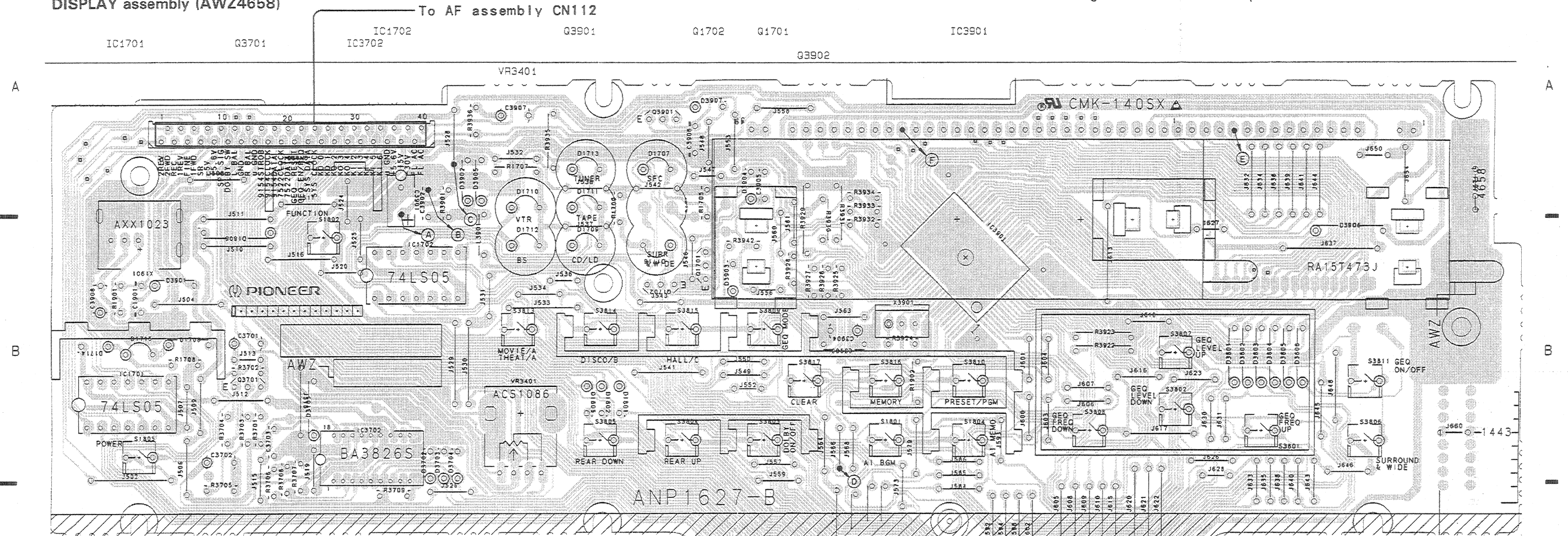
VOLUME assembly

SCH-6

VOLUME assembly

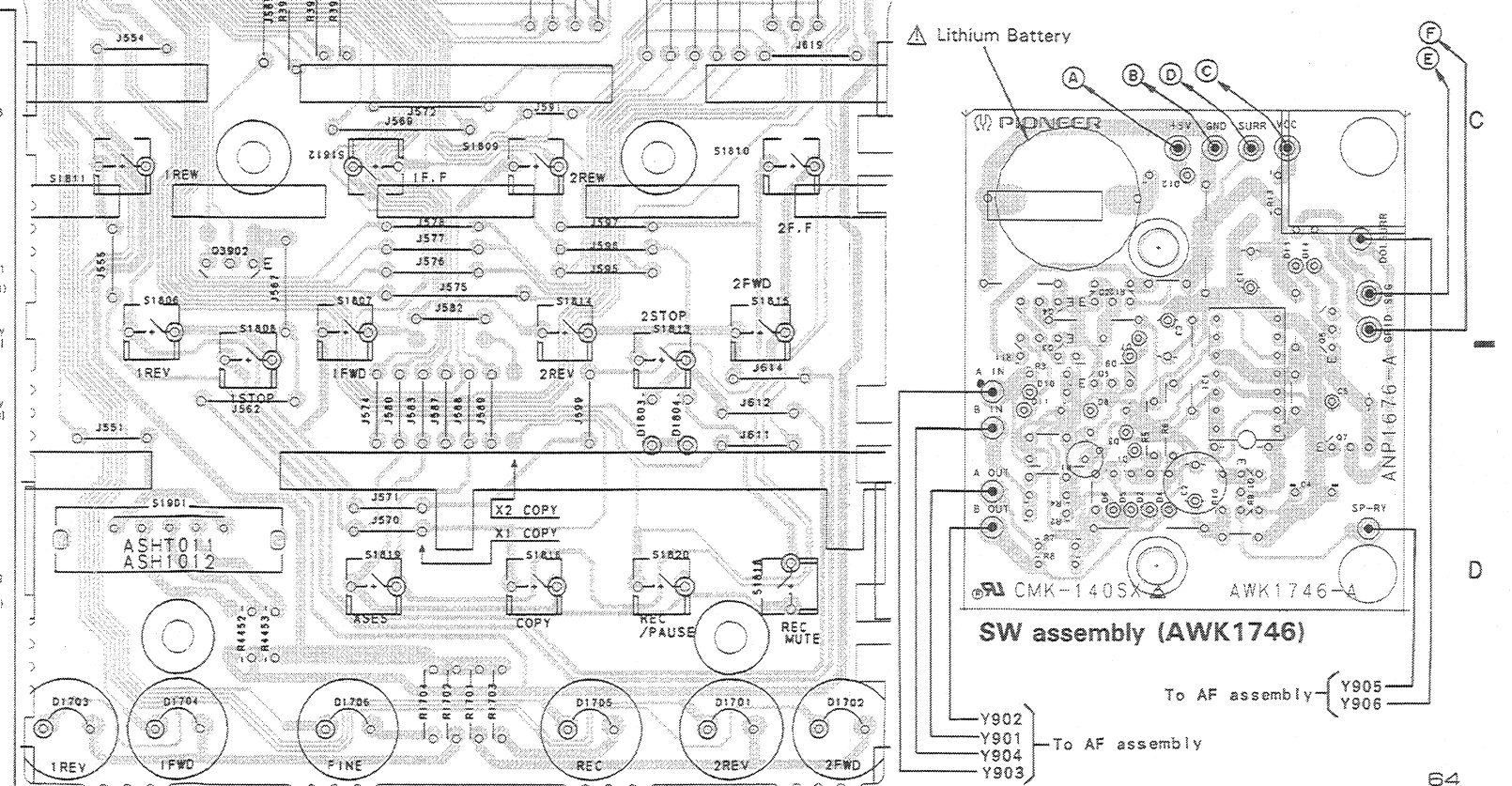
DISPLAY assembly (AWZ4658)

This PCB connection diagram is viewed from the parts mounted side.



SCH-7

-(2/2) SW assembly

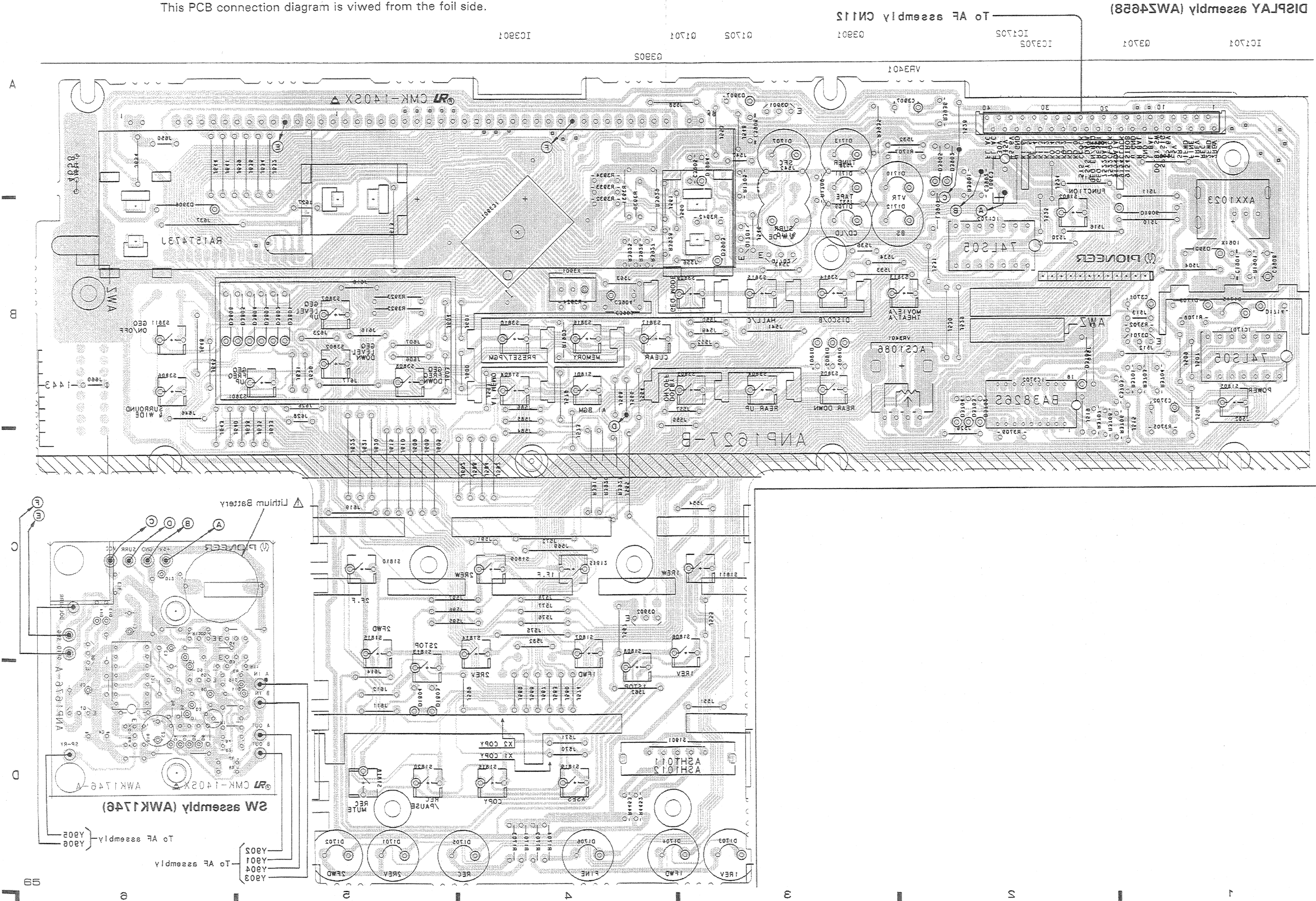


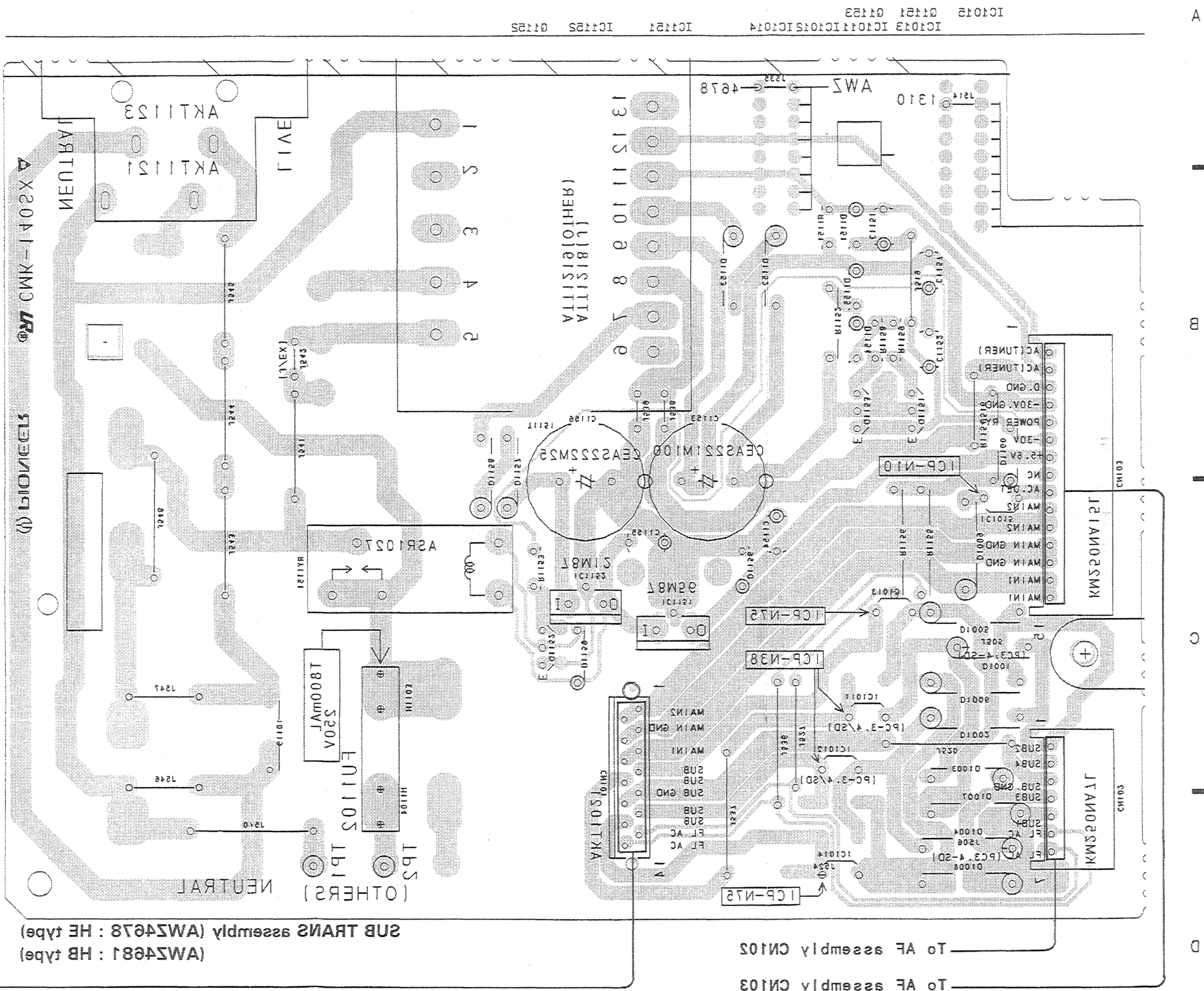
SW assembly (AWK1746)

To AF assembly Y905 Y906

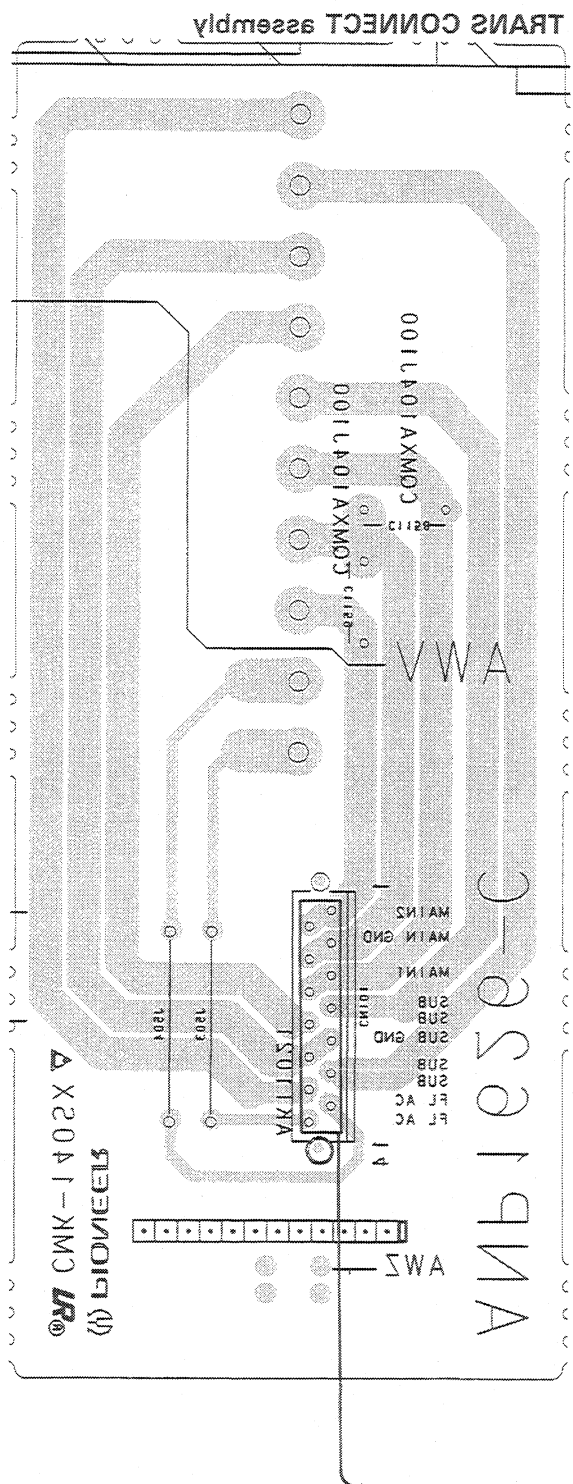
To AF assembly Y902 Y901 Y904 Y903

This PCB connection diagram is viewed from the foil side.

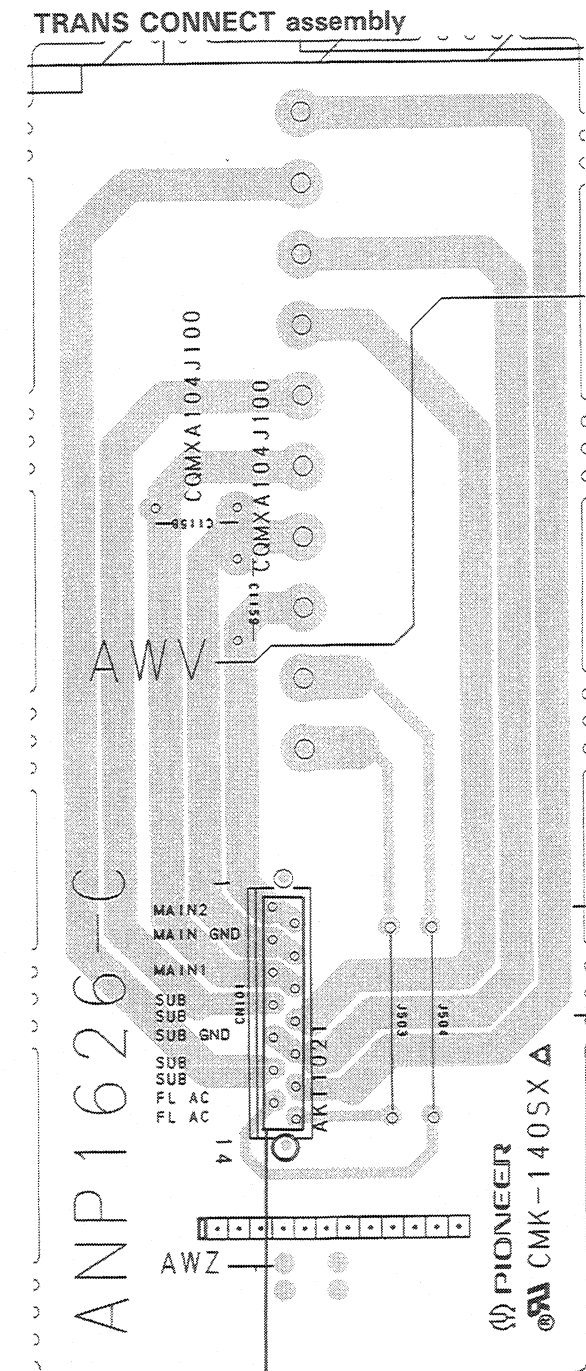
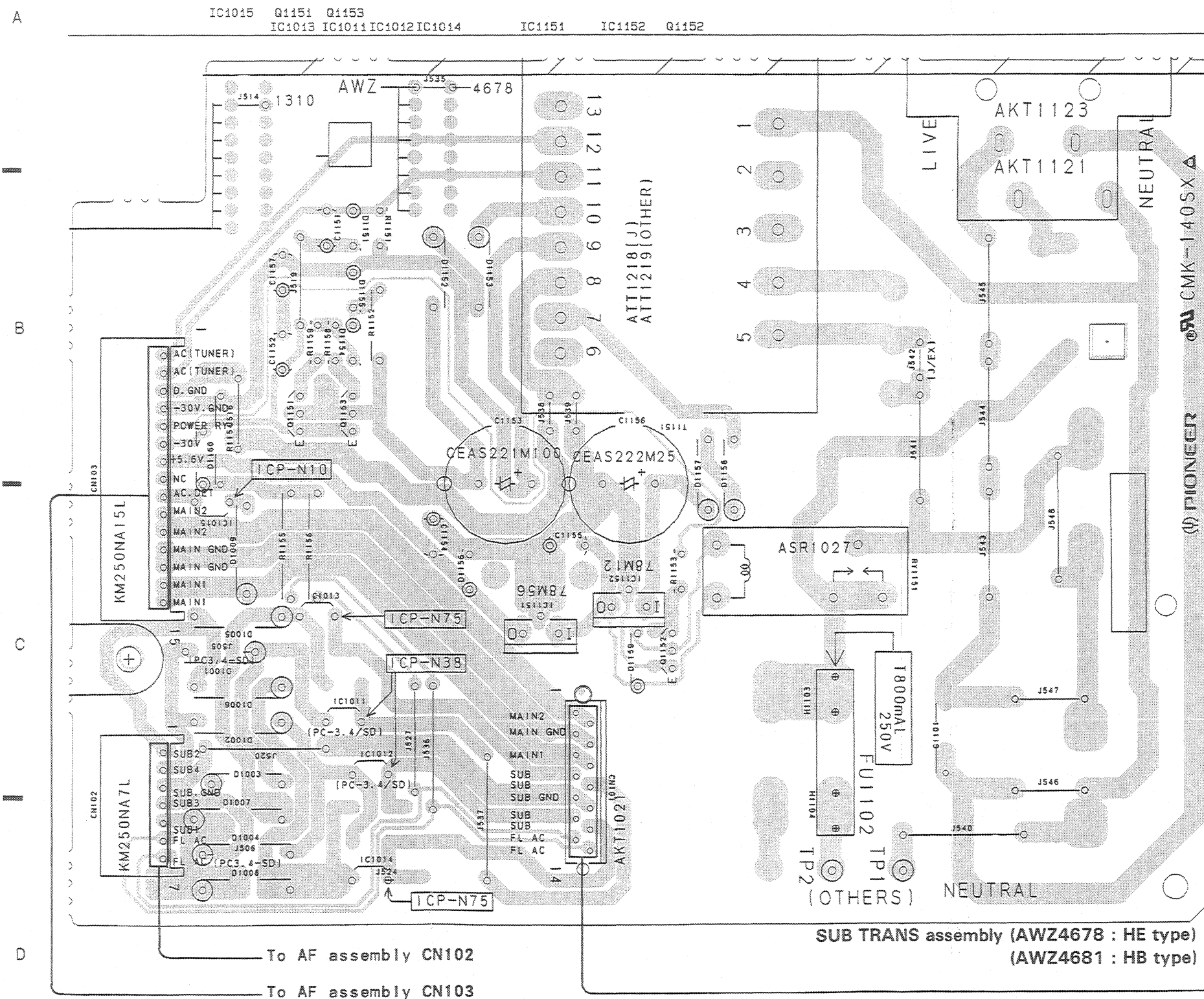




This PCB connection diagram is viwed from the foil side.



4.1.8 SUB TRANS Assembly and TRANS CONNECT Assembly

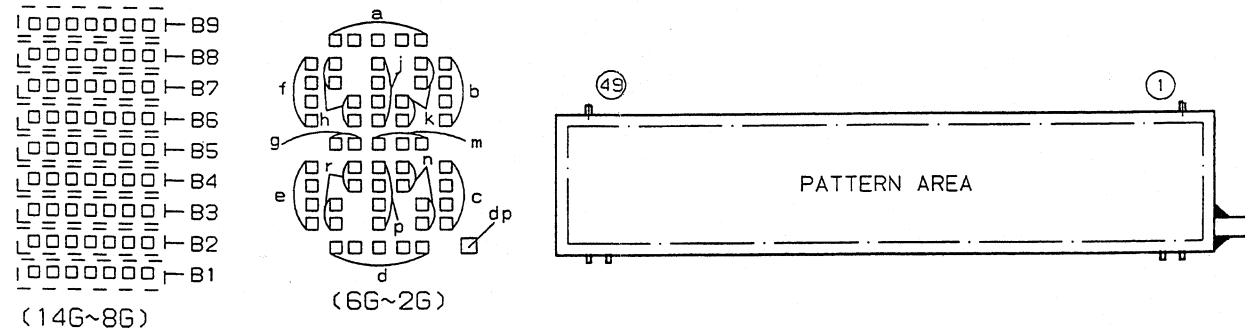
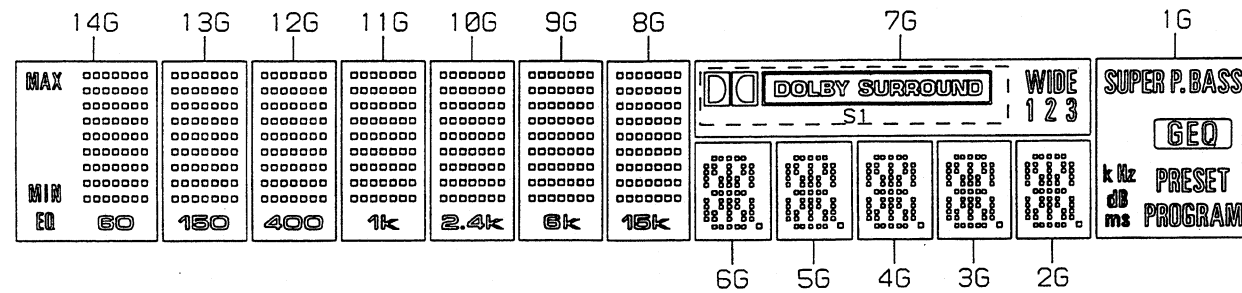


This PCB connection diagram is viewed from the parts mounted side.

AAV1164 (V3901 : DISPLAY ASSEMBLY)

● **FL Tube**

- Grid Assignment



- Pin Connection

[illegible]

NOTE 1) F1,F2 --- Filament 4) 1G~14G --- Grid
2) NP ----- No pin 5) DL ----- Datum Line
3) NC ----- No connection

- Anode Connection

	14G	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	80	150	400	1k	2.4k	6k	15k	-	dp	dp	dp	dp	dp	-
P2	B1	B1	B1	B1	B1	B1	B1	-	d	d	d	d	d	-
P3	B2	B2	B2	B2	B2	B2	B2	-	p	p	p	p	p	-
P4	B3	B3	B3	B3	B3	B3	B3	-	n	n	n	n	n	-
P5	B4	B4	B4	B4	B4	B4	B4	-	r	r	r	r	r	-
P6	B5	B5	B5	B5	B5	B5	B5	-	e	e	e	e	e	ms
P7	B6	B6	B6	B6	B6	B6	B6	-	c	c	c	c	c	dB
P8	B7	B7	B7	B7	B7	B7	B7	-	m	m	m	m	m	Hz
P9	B8	B8	B8	B8	B8	B8	B8	-	g	g	g	g	g	k
P10	B9	B9	B9	B9	B9	B9	B9	-	f	f	f	f	f	PROGRAM
P11	MAX	-	-	-	-	-	-	3	b	b	b	b	b	PRESET
P12	MIN	-	-	-	-	-	-	2	k	k	k	k	k	6EQ
P13	EQ	-	-	-	-	-	-	1	h	h	h	h	h	BASS
P14	-	-	-	-	-	-	-	WIDE	j	j	j	j	j	P.
P15	-	-	-	-	-	-	-	S1	a	a	a	a	a	SUPER

4.2 CD UNIT

P.C.B. pattern diagram indication	Corresponding part symbol	Part name
		Transistor
		FET
		Diode
		Zenner diode
		LED
		Varactor
		Tact switch
		Inductor
		Coil
		Transformer
		Filter
		Ceramic capacitor
		Mylar capacitor
		Styrol capacitor
		Electrolytic capacitor (Non polarized)
		Electrolytic capacitor (Noiseless)
		Electrolytic capacitor (Polarized)
		Electrolytic capacitor (Polarized)
		Power capacitor
		Semi-fixed resistor
		Resistor array
		Resistor
		Resistor
		Resistor
		Resonator
		Thermistor

1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with $\square$ shows negative terminal.
4. The diode marked with $\bigcirc$ shows cathode side.
5. The transistor terminal marked with $\square$ shows emitter.

Note: (Type 4)

1. When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".

2. Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.

3. RESISTORS:
Unit: k: k Ω , M: M Ω , or Ω unless otherwise noted.
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
Tolerance: (F): $\pm 1\%$, (G): $\pm 2\%$, (K): $\pm 10\%$, (M): $\pm 20\%$ or $\pm 5\%$ unless otherwise noted.

4. CAPACITORS:
Unit: p:F or μ F unless otherwise noted.
Ratings: capacitor (μ F)/ voltage (V) unless otherwise noted.
Rated voltage: 50V except for electrolytic capacitors.

5. COILS:
Unit: m:mH or μ H unless otherwise noted.

6. VOLTAGE AND CURRENT:
 : DC voltage (V) in PLAY mode unless otherwise noted.
 mA or -mA: DC current in PLAY mode unless otherwise noted.
 Value in () is DC current in STOP mode.

7. OTHERS:

- ➡ : Signal route.
- Ⓢ : Adjusting point.
- ▼ (Red) : Measurement point.
- The **A** mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.

8. **SWITCHES** (Underline indicates switch position):

(For XD-J215M)

MOTHER BOARD assembly
S351 TEST MODE

DISPLAY BOARD assembly

S701	4
S702	PROGRAM
S703	◀◀/◀◀
S704	5
S705	EJECT
S706	▶/||
S707	2
S708	RANDOM
S709	REPEAT
S710	6
S711	▶▶/▶▶|
S712	■
S713	1
S714	TIME
S715	HI-LITE S
S716	3
S717	EDIT
S718	DELETE

(For XD-J210)

MOTHER BOARD assembly
S351 TEST MODE

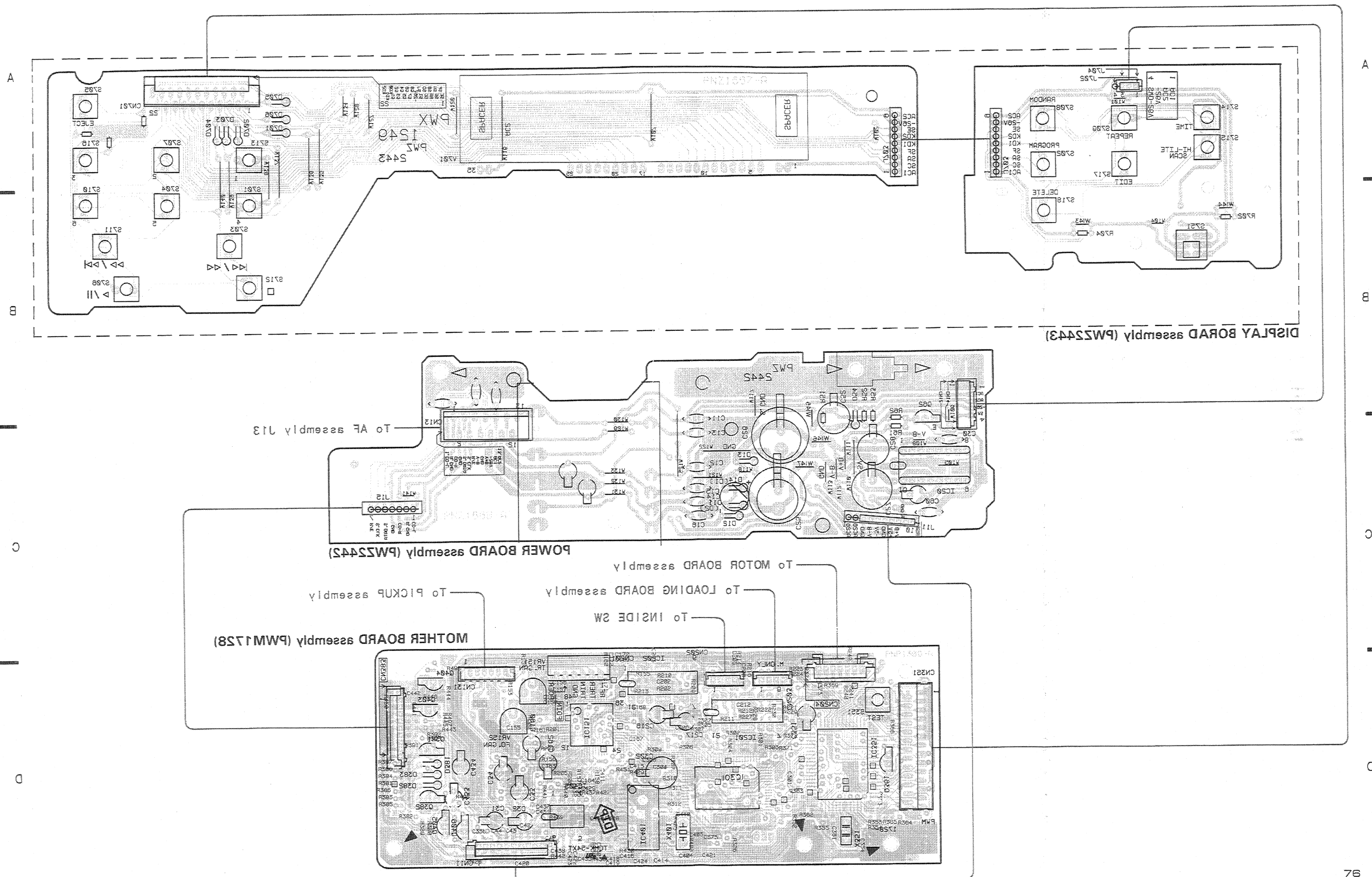
DISPLAY BOARD assembly

S707	REPEAT
S708	TIME
S709	RANDOM
S710	EDIT
S711	▶/||
S712	■
S713	▶▶/▶▶|
S714	◀◀/◀◀
S716	O/C
S717	PROGRAM
S718	HI-LITE SCAN

9. For SCH-□ on the schematic diagram

- SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)

This PCB connection diagram is viewed from the foil side.

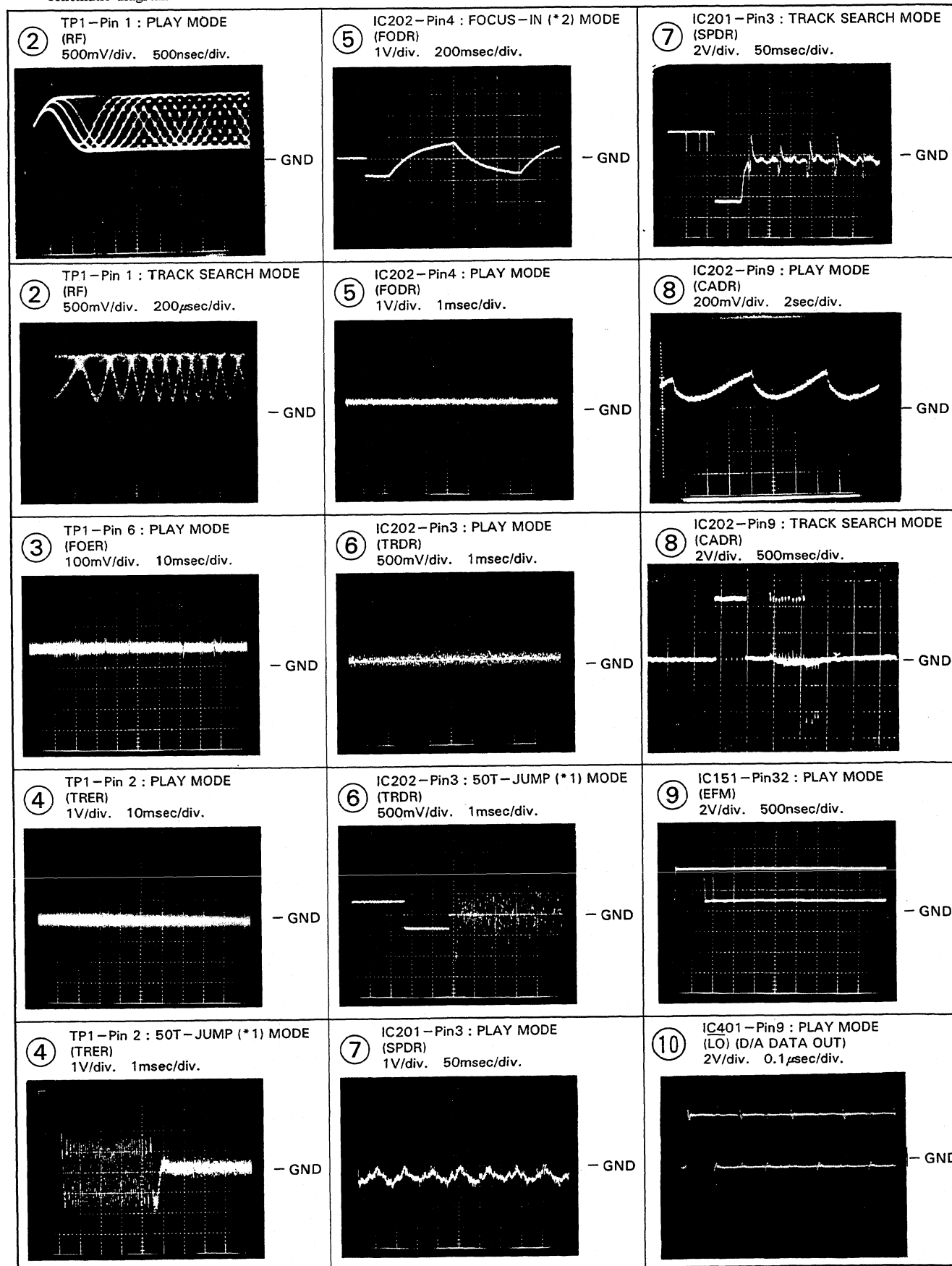


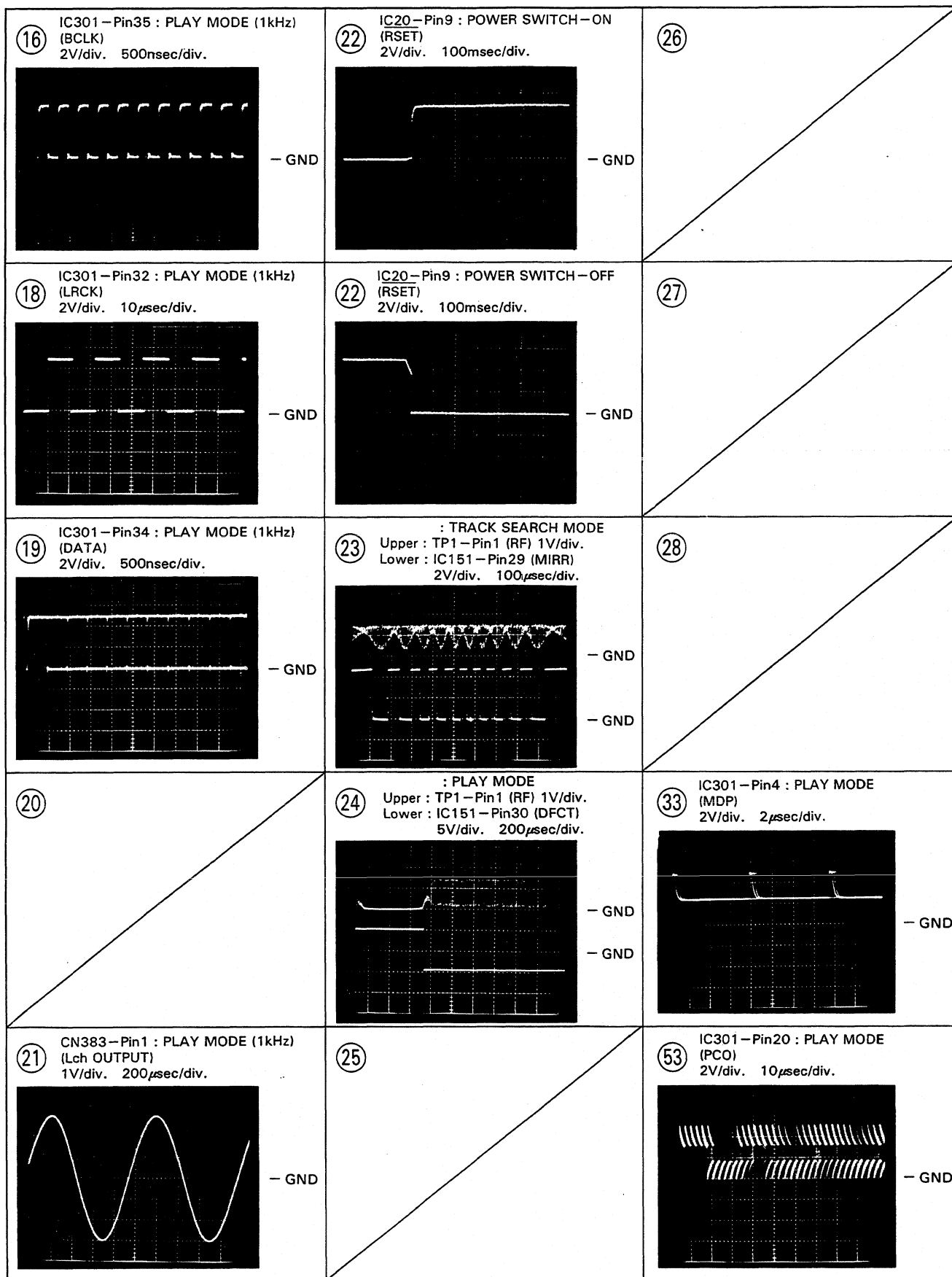
Waveforms

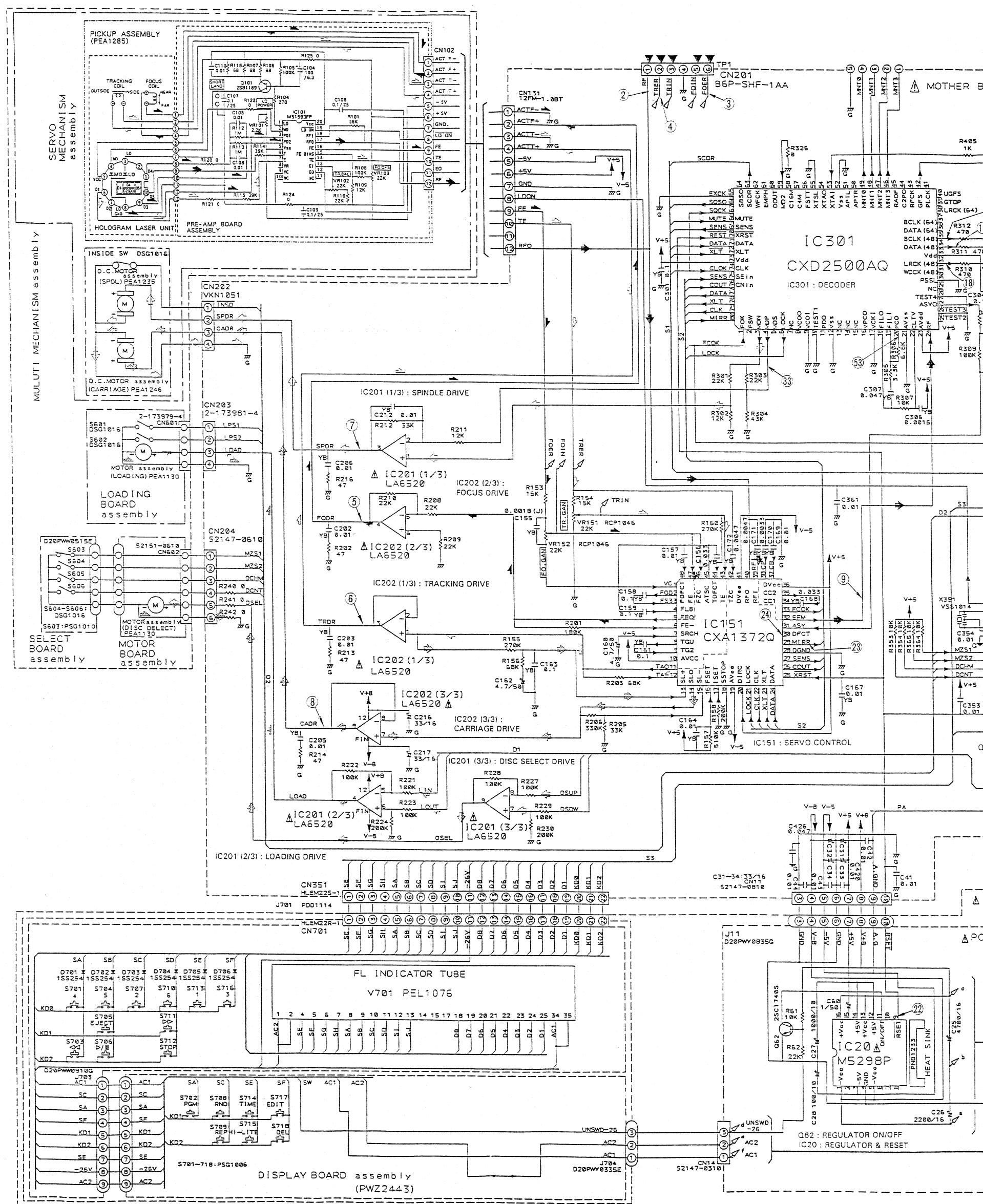
Note: The encircled numbers denote measuring points in the schematic diagram.

*1 50T-JUMP: After switching to the pause mode, press the manual search key.

*2 FOCUS-IN: Press the key without loading a disc.

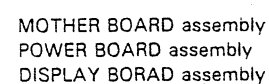






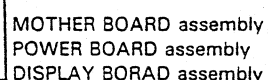
SCH-9

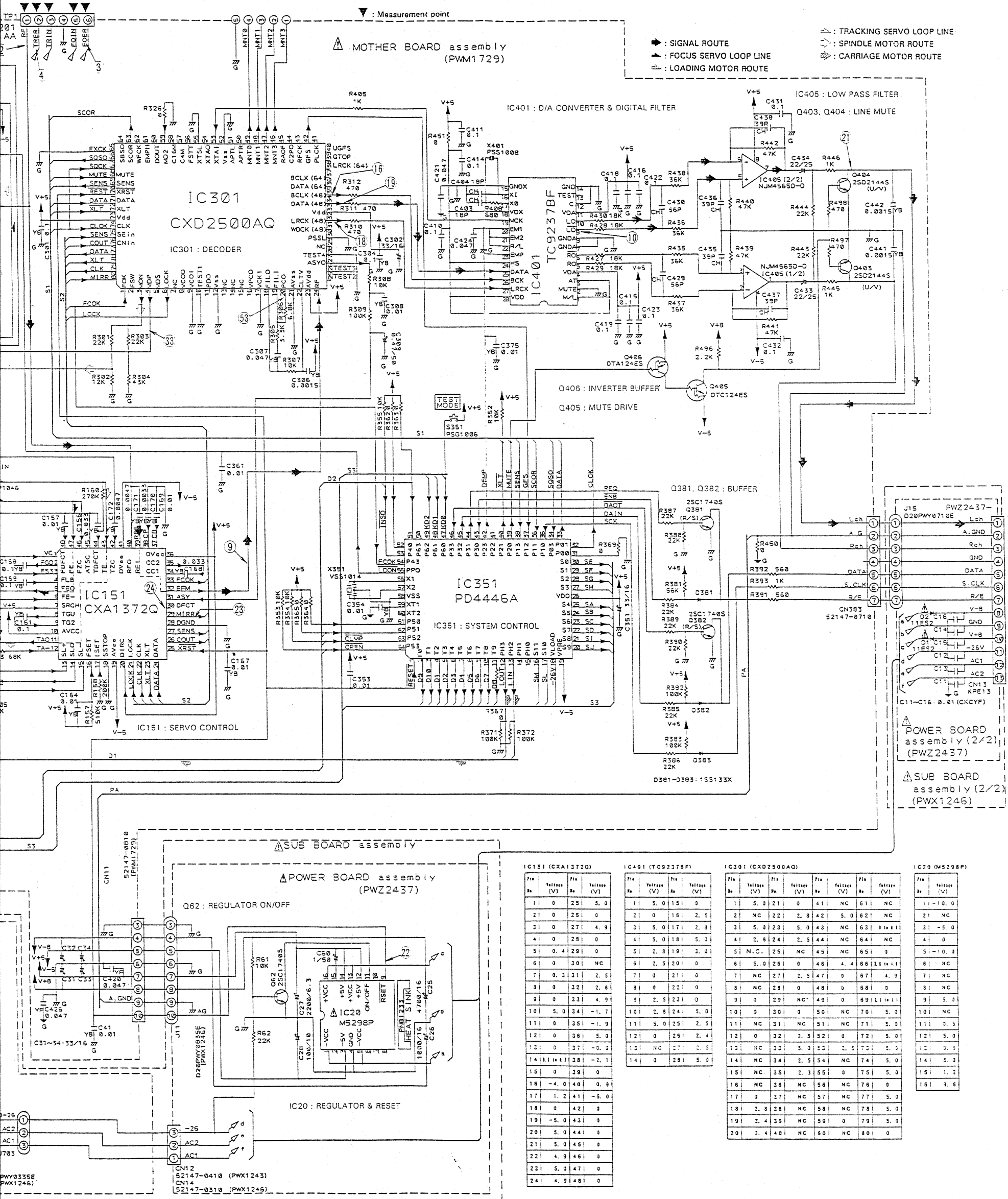
MOTHER BOARD assembly
DISPLAY BOARD assembly



SCH-9

▼ : Measurement point





To DECK AMP SECTION AF assembly J13 (→ SCH-2) or (→ SCH-11)

Pin	Volts (V)	Pin	Volts (V)
1	0	25	5.0
2	0	26	0
3	0	27	4.9
4	0	28	0
5	0.4	29	0
6	0	30	NC
7	0.3	31	2.5
8	0	32	2.5
9	0	33	4.9
10	5.0	34	-1.7
11	0	35	-1.9
12	0	36	5.0
13	0	37	-3.3
14	1.1	38	-2.1
15	0	39	0
16	-4.0	40	0.9
17	1.2	41	-5.0
18	0	42	0
19	-5.0	43	0
20	5.0	44	0
21	5.0	45	0
22	4.9	46	0
23	5.0	47	0
24	4.9	48	0

Pin	Volts (V)	Pin	Volts (V)
1	5.0	131	0
2	0	132	2.5
3	5.0	133	2.5
4	5.0	134	5.0
5	2.8	135	3.0
6	2.5	136	0
7	0	137	0
8	0	138	0
9	2.5	139	0
10	2.8	140	5.0
11	5.0	141	2.5
12	0	142	2.4
13	NC	143	2.5
14	0	144	5.0

Pin	Volts (V)	Pin	Volts (V)
1	5.0	21	0
2	NC	22	2.8
3	5.0	23	5.0
4	2.8	24	2.5
5	NC	25	NC
6	5.0	26	0
7	NC	27	2.5
8	NC	28	0
9	0	29	NC
10	0	30	0
11	NC	31	NC
12	0	32	2.5
13	NC	33	5.0
14	NC	34	2.5
15	NC	35	2.3
16	NC	36	NC
17	0	37	NC
18	2.8	38	NC
19	2.4	39	NC
20	2.4	40	NC

Pin	Volts (V)	Pin	Volts (V)
1	11-10	0	NC
2	NC	1	NC
3	-5.0	2	NC
4	0	3	NC
5	-10.0	4	NC
6	NC	5	NC
7	NC	6	NC
8	NC	7	NC
9	5.0	8	NC
10	NC	9	NC
11	3.5	10	NC
12	5.0	11	NC
13	2.5	12	NC
14	5.0	13	NC
15	1.2	14	NC
16	9.5	15	NC

MOTHER BOARD assembly
POWER BOARD assembly
DISPLAY BOARD assembly

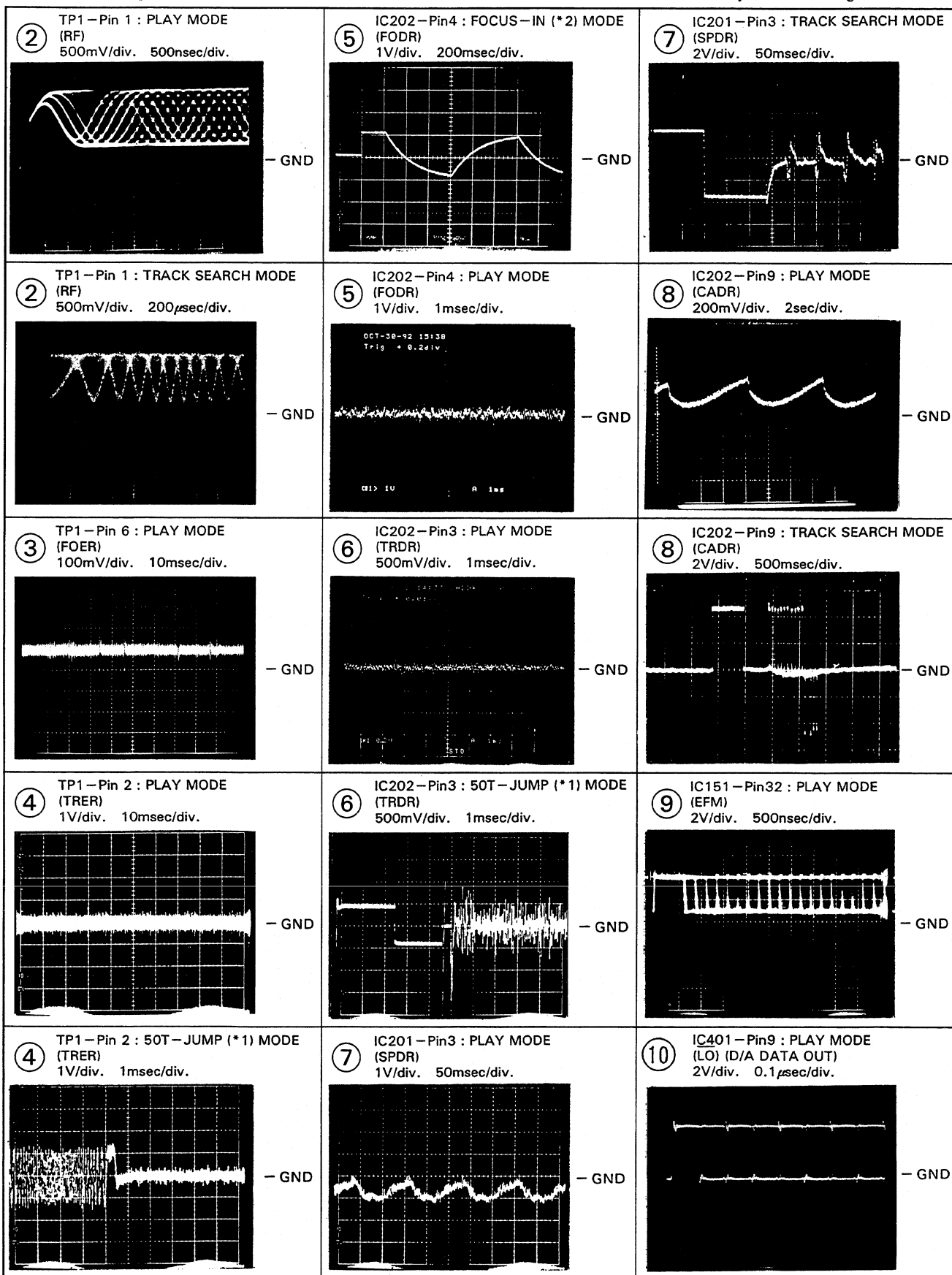
SCH-10

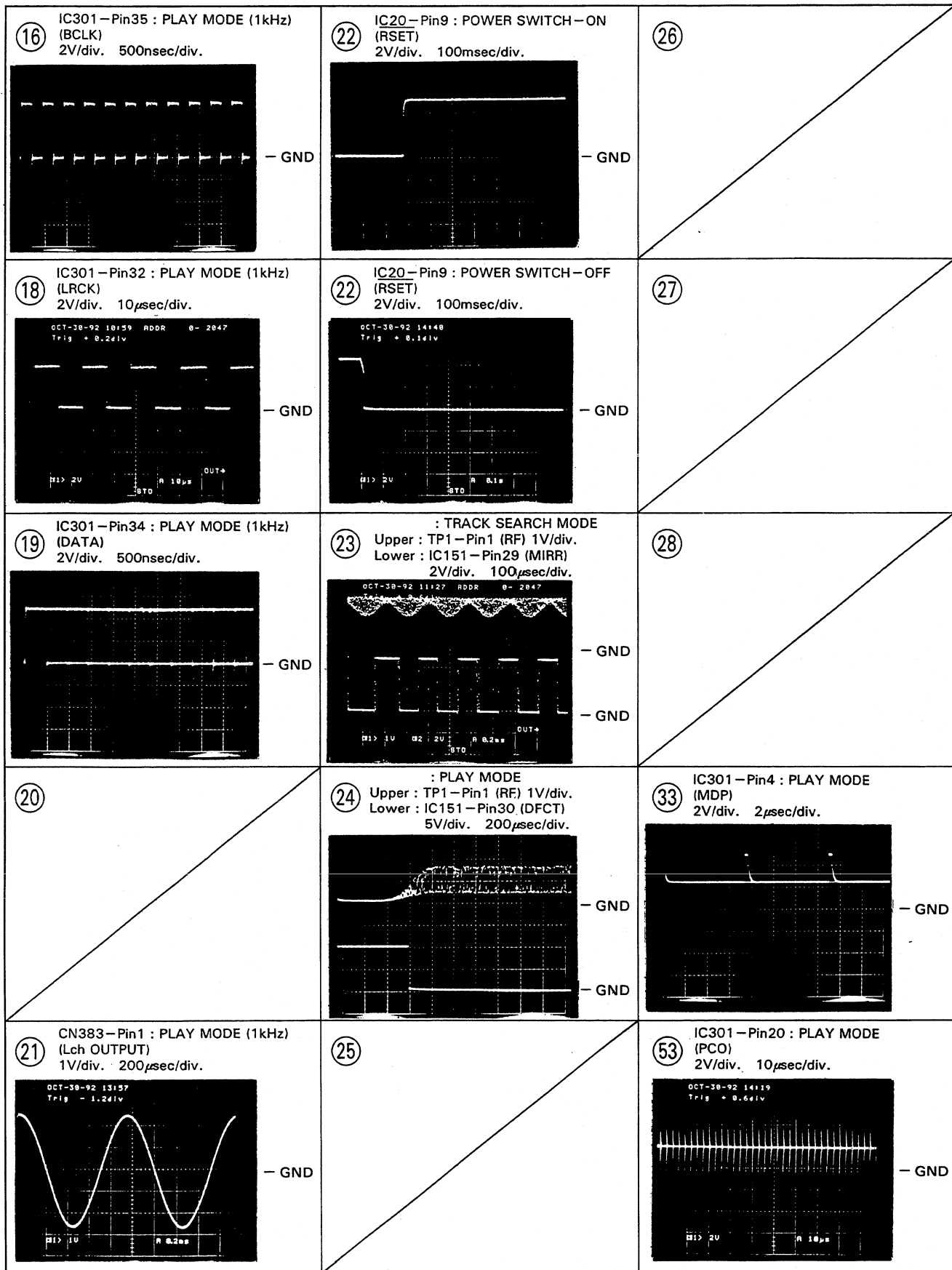
Waveforms

Note: The encircled numbers denote measuring points in the schematic diagram.

*1 50T-JUMP: After switching to the pause mode, press the manual search key.

*2 FOCUS-IN: Press the key without loading a disc.





This PCB connection diagram is viewd from the parts mounted side.

A

A

B

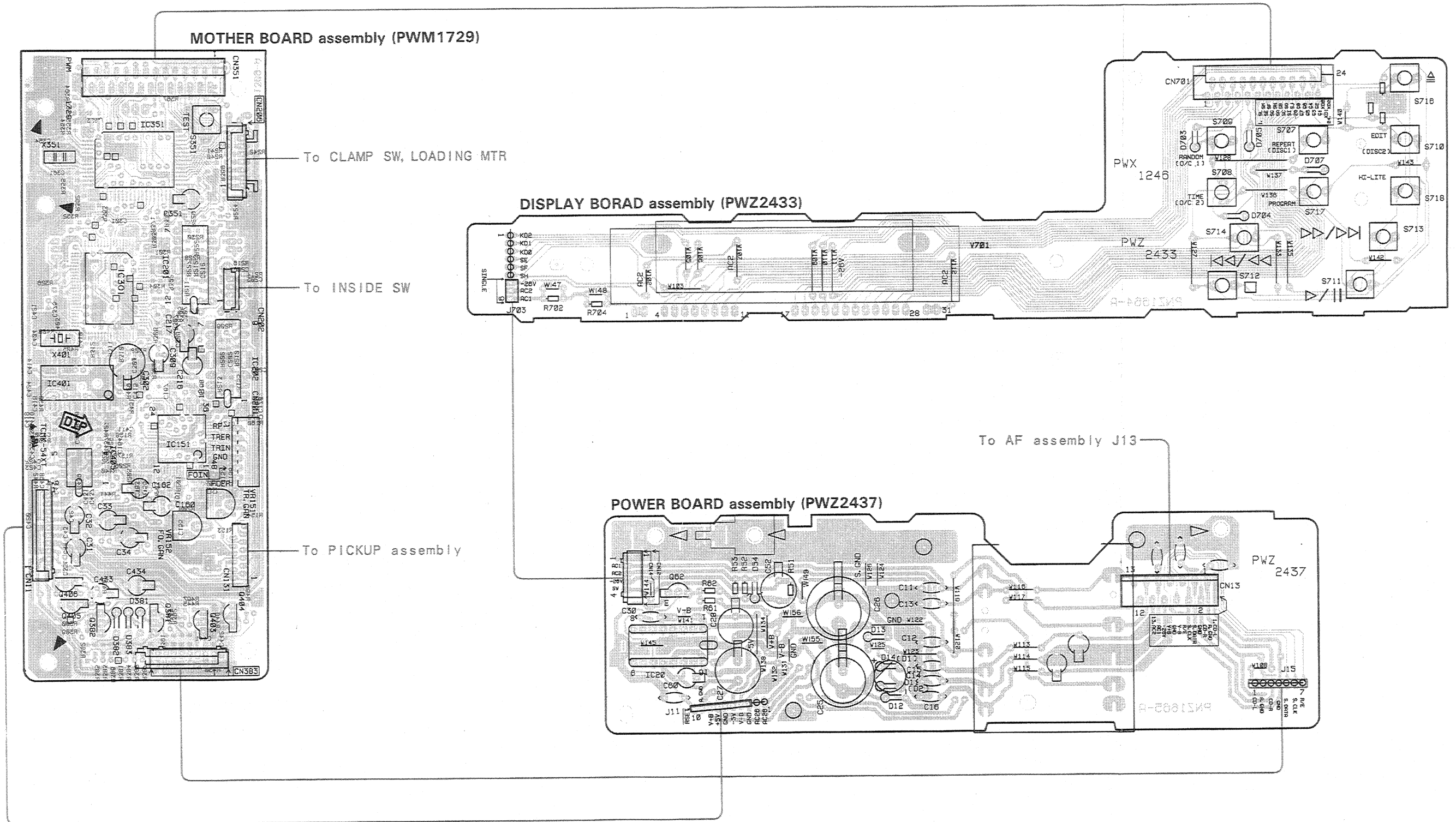
B

C

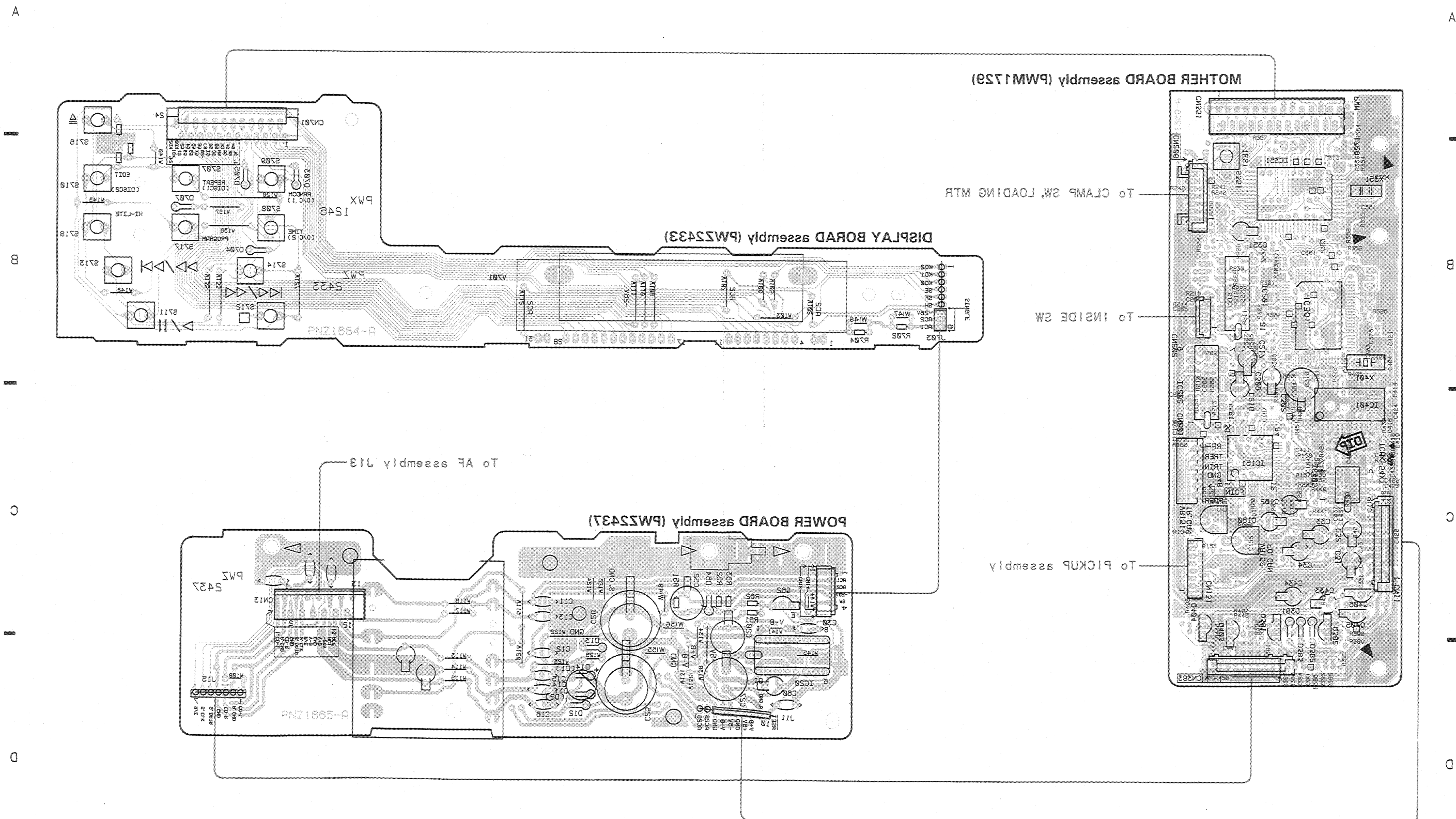
C

D

D



This PCB connection diagram is viwed from the foil side.



5. PCB PARTS LIST

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560 Ω $\rightarrow$ 56 $\times$ 10¹ $\rightarrow$ 561 RD1/8PM $\square$ $\square$ $\square$ J

47k Ω $\rightarrow$ 47 $\times$ 10³ $\rightarrow$ 473 RD1/4PS $\square$ $\square$ $\square$ J

0.5 Ω $\rightarrow$ 0R5 RN2H $\square$ $\square$ $\square$ K

1 Ω $\rightarrow$ 010 RS1P $\square$ $\square$ $\square$ K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω $\rightarrow$ 562 $\times$ 10¹ $\rightarrow$ 5621 RN1/4PC $\square$ $\square$ $\square$ F

5.1 FOR XD-J215M/HE

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
LIST OF ASSEMBLIES							
DECK AMP BLOCK							
		AF ASSEMBLY	AWZ4648			IC2103, IC2301, IC2501, IC3302, IC3303	XRA4558F – P
		VOLUME ASSEMBLY	AWZ4655			Q1253, Q1261, Q1281, Q1282	2SA1048
		DISPLAY ASSEMBLY	AWZ4658			Q1002	2SA1515
		HEADPHONE ASSEMBLY	AWZ4666			Q1252, Q1254, Q1262, Q1271, Q1272, Q2201, Q2202	2SC2458
		DOLBY – C ASSEMBLY	AWZ4669			Q2102, Q2103, Q2203	XDA143ES
						Q1003	XDC124ES
NSP		SURROUND ASSEMBLY	AWM1445			Q2101	XDC143ES
		TRANS CONNECT ASSEMBLY	AWZ4672			D1201	D3SBA20 (A)
		SUB TRANS ASSEMBLY	AWZ4678			D1001, D1002, D1256, D1258 – D1261, D1281, D1282, D1901 – D1903, D1913, D1914	HSS104 – 02
		TAPE ASSEMBLY	AWV1336			D1161, D1162	RD5.1ESB2
		SW ASSEMBLY	AWK1746			D1904, D1911, D1912	RD5.6ESB
CD BLOCK						D1003, D1004, D1011, D1012	S5566
		MOTHER BOARD ASSEMBLY	PWM1728				
		POWER BOARD ASSEMBLY	PWZ2442				
		DISPLAY BOARD ASSEMBLY	PWZ2443				
NSP		LOADING BOARD ASSEMBLY	PWZ2038				
NSP		SELECT BOARD ASSEMBLY	PWZ2533				
NSP		MOTOR BOARD ASSEMBLY	PWZ2040				
					</		

Mark	No.	Description	Parts No.
	C1903		CEAS101M16
	C1209-C1212		CEAS101M50
	C1005, C1006, C1011, C1205, C1206, C1303, C1305, C3311, C3312		CEAS220M25
	C1271		CEAS221M16
	C1009, C1010		CEAS222M25
	C2309, C2310, C2315, C2316, C3131-C3134, C3301, C3302		CEAS2R2M50
	C2317, C2318		CEAS330M25
	C3113, C3114, C3119, C3120		CEASR15M50
	C3117, C3118		CEASR47M50
	C1007, C1008		CEHAQ220M16
	C1315, C1316		CEHAQ470M35
	C1307, C1309, C1901, C1902, C1910		CKCYF473Z50
	C3109, C3110, C3115, C3116		CKCYX683M25
	C1207, C1208		CKPUYX182M16
	C1905-C1909		CKSQYB102K50
	C2311, C2312		CKSQYB152K50
	C3121, C3122, C3127, C3128		CKSQYB182K50
	C3105, C3106, C3111, C3112		CKSQYB273K50
	C3103, C3104, C3123, C3124		CKSQYB472K50
	C2313, C2314		CKSQYB562K50
	C3101, C3102, C3107, C3108		CKSQYF103Z50
	C3137, C3138, C3142		CKSQYF473Z50
	C1215-C1218		CQMA473J50

RESISTORS

R1007-R1010	RD1/2PMFL100J
R1254	RD1/4PM153J
R1256	RD1/4PM243J
R1015	RD1/4PM331J
R1013, R1014, R1213, R1214	RD1/4PM4R7J
R1211, R1212	RD1/4PM561J
R1207, R1208	RD1/4PM563J
R2317, R2318	RD1/4PM820J
R1309	RD1/4PMF100J
R1215, R1216, R1311	RD1/4PMFL100J
R1209, R1210	RD1/4PMFL101J
R3651, R3652	RS1/10S000J
R2313, R2314	RS1/10S101J
R1922, R2303, R2304, R3315-R3318	RS1/10S102J
R1923, R2113-R2117, R2213, R2214, R3105, R3106, R3130, R3131	RS1/10S103J
R2108, R2315, R2316, R3301, R3302, R3503, R3504	RS1/10S104J
R3111-R3126	RS1/10S105J
R2311, R2312	RS1/10S122J
R2101, R2102, R3103, R3104	RS1/10S123J
R2103, R2104	RS1/10S133J
R3307-R3312	RS1/10S152J
R2507, R2508	RS1/10S153J
R2215, R2216	RS1/10S203J
R2201, R2202, R2301, R2302	RS1/10S221J
R1904-1908	RS1/10S222J
R2105, R2106	RS1/10S332J

Mark	No.	Description	Parts No.
	R3305, R3306		RS1/10S333J
	R2501, R2502		RS1/10S392J
	R2109, R2110, R3511, R3512		RS1/10S472J
	R2107, R2305-R2308, R3101, R3102		RS1/10S473J
	R2309, R2310		RS1/10S474J
	R2219, R2220		RS1/10S562J
	R1918, R1919		RS1/10S563J
	R2503, R2504		RS1/10S682J
	R3109, R3110		RS1/10S823J
	R1261, R1262, R1282		RS2LMFR22J
	Other Resistors		RD1/8PM□□□J
OTHERS			
	X1901 (8.00MHz)		ASS1015
	6P PIN JACK		AKB1121
	2P PIN JACK		AKB1146
	4P SPEAKER TERMINAL		AKE1012
	DC JACK		AKN-203
	14P SOCKET		AKP1048
	CN112 40P SOCKET		AKP1085
	CN105 36P SOCKET		AKP1105
	CN106 7P JUMPER CONNECTOR		KPE7
	SCREW		BBZ30P080FZK

VOLUME ASSEMBLY

SEMICONDUCTORS

IC1502	TA7291S
IC1501, IC1551	XRA4558-P
Q1501, Q1502, Q1551	2SC2878
Q1503	XDA124ES

CAPACITORS

C1507, C1508	CEAS101M16
C1501-C1504, C1552	CEAS220M25
C1505, C1506	CEAS470M25
C1553	CKCYB391K50
C1511	CKDYX104M25
C1555, C1556	CKPUYF103Z25
C1509, C1510	CKPUYF473Z16

RESISTORS

VR1501 (100k-4B*4 50k-6B)	ACX1063
R1511, R1512	RD1/4PM820J
Other Resistors	RD1/8PM□□□J

DISPLAY ASSEMBLY

SEMICONDUCTORS

IC3702	BA3826S
IC3901	PDC009A
IC1701, IC1702	SN74LS05N

Mark	No.	Description	Parts No.
	Q3701		2SC2458
	Q3901, Q3902		XDC124ES
	Q1701, Q1702		XDC143ES
	D1701-D1704, D1707, D1716		AEL1064
	D1705, D1706, D1709-D1713, D1715		AEL1065
	D1708, D1714, D1801-D1806,		HSS104-02
	D3702-D3705, D3801-D3806,		
	D3901-D3907		
SWITCHES			
	S1801, S1802, S1804-S1816,		ASG1034
	S1818-S1820, S3801-S3811,		
	S3813-S3817		
	S1901		ASH1011
COIL			
	L3901		LAU221K
CAPACITORS			
	C3901		ACH1135
	C1901		CCCSL100D50
	C3907		CEAS100M50
	C3904, C3908		CEAS470M10
	C3701, C3702		CEJA2R2M50
	C3906		CKCYB102K50
	C3703, C3905		CKPUYB102K50
	C3902, C3903		CKPUYF223Z25
RESISTORS			
	VR3401 (50k-B)		ACS1086
	Other Resistors		RD1/8PM□□□J
OTHERS			
	X3901 (12MHz)		ASS1062
	CN1901 40P SOCKET		AKP1085
	V3901 FL TUBE		AAV1164
	REMOTE CONTROL		AXX1023
	SENSOR UNIT		
HEADPHONE ASSEMBLY			
SEMICONDUCTORS			
	IC1231		M5216P
	Q1231, Q1232		2SC2458
	Q1233		XDA124ES
CAPACITORS			
	C1235, R1236		CEAS220M25
	C1231		CEAS2R2M50
	C1241, C1242		CEAS330M25
	C1233, C1234		CEAS470M25
	C1232		CEJA2R2M50
	C1237, C1238		CKPUYB101K50
	C1239, C1240		CKPUYB151K50

Mark	No.	Description	Parts No.
RESISTORS			
	R1243, R1244		RS1LMF820J
	Other Resistors		RD1/8PM□□□J
OTHERS			
	HEADPHONE JACK		AKN1010
DOLBY-C ASSEMBLY			
SEMICONDUCTORS			
	IC4431		CX20187
	Q4431		XDA143ES
	Q4432		XDC143ES
COILS			
	F4431, F4432		ATF1064
	L4431, L4432		LTA223J
CAPACITORS			
	C4419, C4420, C4445, C4446		CEAS100M50
	C4415, C4416		CEAS101M10
	C4421, C4422		CEAS2R2M50
	C4429, C4430		CEJAR47M50
	C4443, C4444		CFTXA103J50
	C4433, C4434		CFTXA153J50
	C4431, C4432		CFTXA154J50
	C4417, C4418		CFTXA223J50
	C4435, C4436		CFTXA224J50
	C4439, C4440		CFTXA473J50
	C4437, C4438		CFTXA683J50
	C4425, C4426		CQMA332J50
	C4427, C4428		CQMA472J50
	C4423, C4424		CQMA561J50
	C4441, C4442		CQMA682J50
RESISTORS			
	All Resistors		RD1/8PM□□□J
OTHERS			
	15P PLUG		AKM1063
SURROUND ASSEMBLY			
SEMICONDUCTORS			
	IC3404		LA2730
	IC3403		M50198P
	IC3451		MC14052BCP
	IC3405		NJM78M05FAS
	IC1602		TC9154AP
	IC1601, IC3401, IC3402		XRA4558-P
	D1601, D1602, D3401-D3404		HSS104-02

Mark	No.	Description	Parts No.
COIL			
	L3401		LAU5R6K
CAPACITORS			
	C3410		CEANP100M35
	C3425		CEAS010M50
	C3401, C3415, C3418, C3419, C3429		CEAS100M50
	C3427		CEAS101M10
	C3416		CEAS101M25
	C3426		CEAS220M16
	C1601, C1603, C1605, C1607, C3430, C3453		CEAS2R2M50
	C3405, C3412		CEAS470M16
	C3428		CEAS470M25
	C3423		CEASR33M50
	C3413		CFTXA103J50
	C3404, C3409, C3424		CFTXA104J50
	C3420, C3421		CFTXA333J50
	C3452		CFTXA334J50
	C3406, C3407		CFTXA474J50
	C1610		CKCYB471K50
	C3411		CKDYX473M16
	C3433, C3434		CKPUYB101K50
	C3451		CQMA104J50
	C3417		CQMA123J50
	C3422		CQMA472J50
	C3403, C3414		CQMA561J50
	C3402, C3408		CQMA562J50
RESISTORS			
	R3437		RFA1/4PS390J
	Other Resistors		RD1/8PM□□□J
OTHERS			
	X3401 (3.27MHz)		ASS1016
TRANS CONNECT ASSEMBLY			
CAPACITORS			
	C1158, C1159		CQMXA104J100
SUB TRANS ASSEMBLY			
SEMICONDUCTORS			
	IC1015		ICP-N10
	IC1011, IC1012		ICP-N38
	IC1013, IC1014		ICP-N75
	IC1152		NJM78M12FAS
	IC1151		NJM78M56FAS
	Q1151, Q1153		2SB560
	Q1152		2SC2458

Mark	No.	Description	Parts No.
	D1154, D1156, D1159		HSS104-02
	D1160		RD10ESB
	D1151		RD15ESB
	D1155		RD36ESB2
	D1001-D1009, D1152, D1153, D1157, D1158		S5566
RELAY			
	RY1151		ASR1027
TRANSFORMER			
	T1151		ATT1219
CAPACITORS			
	C1101 (0.01/400)		ACG1003
	C1152, C1157		CEAS220M50
	C1153		CEAS221M100
	C1156		CEAS222M25
	C1151, C1154		CEAS470M16
	C1155		CEAS470M25
RESISTORS			
	R1152		RD1/4PM273J
	R1155, R1156		RD1/4PM470J
	Other Resistors		RD1/8PM□□□J
OTHERS			
	CN 1P AC INLET		AKP1121
TAPE ASSEMBLY			
SEMICONDUCTORS			
	IC4202		MC14066BF
	IC4302		SN74LS05N
	IC4121, IC4151		UPC4570G2
	IC4201, IC4251, IC4301, IC4601		XRA4558F-P
	Q4352, Q4904, Q4906, Q4908, Q4910		2SA1515
	Q4203, Q4204, Q4355, Q4451-Q4454		2SC2458
	Q4205, Q4206, Q4461, Q4462		2SC2878
	Q4353, Q4354		2SC3377
	Q4321, Q4322		2SK373
	Q4207, Q4460		XDA124ES
	Q4208		XDA143ES
	Q4905, Q4907, Q4909, Q4911		XDC124ES
	Q4209, Q4351		XDC143ES
	D4251, D4252, D4321-D4326, D4451, D4452, D4903-D4912		HSS104-02
COILS & TRANSFORMERS			
	T4351		ATX-043
	L4301, L4302		LTA392J
	L4303, L4304		LTA822J

Mark	No.	Description	Parts No.
CAPACITORS			
	C4362 (2000p/630)		ACE1020
	C4333, C4334		CCCSL100D50
	C4354		CCCSL221J50
	C4319, C4320		CCDSL271K500
	C4123, C4124		CCSQCH331J50
	C4252		CCSQCH560J50
	C4151, C4152		CCSQCH561J50
	C4253, C4303, C4304, C4453, C4454		CEAS010M50
	C4254		CEAS0R1M50
	C4213, C4214, C4358, C4363		CEAS100M50
	C4133, C4134, C4161, C4162		CEAS101M10
	C4455, C4456		CEAS220M16
	C4321, C4322		CEAS2R2M50
	C4309, C4310		CEAS330M16
	C4353		CEAS3R3M50
	C4131, C4132, C4159, C4160		CEAS470M10
	C4325, C4326, C4361		CEAS470M16
	C4129, C4130, R4157, R4158		CEAS4R7M50
	C4307, C4308		CFTXA823J50
	C4323, C4324, C4356		CKCYB681K50
	C4352, C4360		CKCYF103Z50
	C4211, C4212		CKSQYB152K50
	C4311, C4312		CKSQYB223K50
	C4305, C4306		CKSQYB272K50
	C4251		CKSQYB473K50
	C4357		CQMA123K250
	C4355		CQMA153J50
	C4209, C4210		CQMA183J50
	C4127, C4128, C4155, C4156		CQMA223J50
	C4317, C4318		CQMA333J50
	C4351		CQMA562K400
	C4313, C4314		CQMA822J50
RESISTORS			
	VR4901, VR4902		VRTP6HS103
	VR4121, VR4122, VR4151, VR4152,		VRTP6HS202
	VR4451, VR4452		
	VR4351, VR4352		VRTP6HS204
	R4129, R4130, R4157, R4158		RS1/10S101J
	R4315, R4316, R4461, R4462		RS1/10S102J
	R4201, R4202		RS1/10S103J
	R4307, R4308, R4601, R4602		RS1/10S104J
	R4209, R4210, R4459		RS1/10S105J
	R4257		RS1/10S123J
	R4127, R4128, R4155, R4156		RS1/10S124J
	R4603, R4604		RS1/10S153J
	R4123, R4124, R4151, R4152, R4219,		RS1/10S154J
	R4220, R4252		
	R4253		RS1/10S181J
	R4222, R4321, R4322, R4458		RS1/10S222J
	R4254, R4259		RS1/10S223J
	R4251, R4605, R4606		RS1/10S224J
	R4401, R4402		RS1/10S273J
	R4319, R4320, R4465, R4466		RS1/10S302J

Mark	No.	Description	Parts No.
	R4207, R4208		RS1/10S332J
	R4311, R4312		RS1/10S333J
	R4313, R4314		RS1/10S393J
	R4455, R4456		RS1/10S471J
	R4215, R4216, R4231, R4450, R4611		RS1/10S472J
	R4218, R4230, R4256, R4258		RS1/10S473J
	R4255		RS1/10S514J
	R4125, R4126, R4153, R4154		RS1/10S622J
	R4325, R4326		RS1/10S681J
	R4463, R4464		RS1/10S682J
	R4309, R4310		RS1/10S683J
	R4317, R4318, R4609, R4610		RS1/10S820J
	Other Resistors		RD1/8PM□□□J

OTHERS

CN 36P SOCKET AKP1105

SW ASSEMBLY
SEMICONDUCTORS

IC1 TC74HC74AP
Q1-Q3, Q6, Q7 XDC124ES
Q4, Q5 XDC143ES
D1-D14 HSS104-02

CAPACITORS

C4 CCCSL101J50
C5 CEANP100M35
C2, C3 CEASR15M50
C6 CEAS101M10
C1 CEAS220M25

RESISTORS

R13 RD1/4PM390J
Other Resistors RD1/8PM□□□J

CD BOLCK
MOTHER BOARD ASSEMBLY
SEMICONDUCTORS

IC151 CXA1372Q
IC301 CXD2500AQ
△ IC201, IC202 LA6520
IC405 NJM4565D-D
IC351 PD4439A
IC401 TC9237BF
Q361, Q381, Q382 2SC1740S
Q403, Q404 2SD2144S
Q406 DTA124ES
Q405 DTC124ES
D381-D383 1SS133X

XD-J215M, XD-J210

Mark	No.	Description	Parts No.
SWITCH			
	S351		PSG1006
CAPACITORS			
	C403, C404		CCSQCH180J50
	C435-C438		CCSQCH390J50
	C429, C430		CCSQCH560J50
	C433, C434		CEAS220M25
	C31-C34, C216, C217, C302, C351		CEAS330M16
	C160, C162		CEAS4R7M50
	C309		CEASR47M50
	C157, C164, C167, C169, C202, C203, C205, C206, C212, C308, C354, C375		CKSQYB103K50
	C158, C159, C161, C163, C301, C304		CKSQYB104K25
	C306, C441, C442		CKSQYB152K50
	C155		CKSQYB182K50
	C170		CKSQYB332K50
	C156, C168		CKSQYB333K25
	C171, C172		CKSQYB472K50
	C307		CKSQYB473K25
	C41-C44, C353, C356, C361, C420		CKSQYF103Z50
	C410, C411, C414-C416, C418, C419, C422, C423, C431, C432		CKSQYF104Z25
	C421, C424, C426		CKSQYF473Z25
RESISTORS			
	VR151, VR152 (22k)		RCP1046
	Other Resistors		RS1/10S□□□J
OTHERS			
	CN131 12P FFC CONNECTOR		12FM-1.0BT
	CN201 6P TOP POST		B6P-SHF
	CN351 22P FFC CONNECTOR		HLEM22S
	X401 (16.9344MHz)		PSS1008
	X351 (4.19MHz)		VSS1014
POWER BOARD ASSEMBLY			
SEMICONDUCTORS			
△	IC20		M5298P
	Q62		2SC1740S
△	D1, D2		11ES2
CAPACITORS			
	C60		CEAS010M50
	C28		CEAS101M10
	C27		CEAS102M10
	C11-C16		CKCYF103Z50
RESISTORS			
	All Resistors		RD1/6PM□□□J
OTHERS			
	CN13 13P JUMPER CONNECTOR		KPE13

Mark	No.	Description	Parts No.
DISPLAY BOARD ASSEMBLY			
SEMICONDUCTORS			
	D701-D706		1SS254
SWITCHES			
	S701-S718		PSG1006
OTHERS			
	CN701 22P FFC CONNECTOR		HLEM22R
	V701 FL TUBE		PEL1076
LOADING BOARD ASSEMBLY			
SWITCHES			
	S601, S602 PUSH SWITCH		DSG1016
SELECT BOARD ASSEMBLY			
SWITCHES			
	S604-S606 PUSH SWITCH		DSG1016
	S603 DETECTOR SWITCH		PSG1010
MOTOR BOARD ASSEMBLY			
<i>MOTOR BOARD assembly has no service part.</i>			
5.2 FOR XD-J210/HE			
Mark	No.	Description	Parts No.
LIST OF ASSEMBLIES			
DECK AMP BLOCK			
	AF ASSEMBLY		AWZ4648
	VOLUME ASSEMBLY		AWZ4655
	DISPLAY ASSEMBLY		AWZ4658
	HEADPHONE ASSEMBLY		AWZ4666
	DOLBY-C ASSEMBLY		AWZ4669
NSP	SURROUND ASSEMBLY		AWM1445
	TRANS CONNECT ASSEMBLY		AWZ4672
	SUB TRANS ASSEMBLY		AWZ4678
	TAPE ASSEMBLY		AWV1336
	SW ASSEMBLY		AWK1746
CD BLOCK			
	MOTHER BOARD ASSEMBLY		PWM1729
	DISPLAY BOARD ASSEMBLY		PWZ2433
	POWER BOARD ASSEMBLY		PWZ2437
NSP	MECHANISM BOARD ASSEMBLY		PWX1192
NOTE :			
<i>The DECK AMP BLOCK of XD-J210/HE is the same as that of XD-J215M/HE.</i>			
<i>Refer to "5.1 FOR XD-J215M/HE".</i>			

Mark	No.	Description	Parts No.
CD BLOCK			
MOTHER BOARD ASSEMBLY			
SEMICONDUCTORS			
	IC151		CXA1372Q
	IC301		CXD2500AQ
△	IC201, IC202		LA6520
	IC405		NJM4565D-D
	IC351		PD4446A
	IC401		TC9237BF
	Q381, Q382		2SC1740S
	Q403, Q404		2SD2144S
	Q406		DTA124ES
	Q405		DTC124ES
	D381-D383		1SS133X
SWITCH			
	S351		PSG1006
CAPACITORS			
	C403, C404		CCSQCH180J50
	C435-C438		CCSQCH390J50
	C429, C430		CCSQCH560J50
	C433, R434		CEAS220M25
	C31-C34, C216, C217, C302, C351		CEAS330M16
	C160, C162		CEAS4R7M50
	C309		CEASR47M50
	C157, C164, C167, C169, C212, C308, C354, C375		CKSQYB103K50
	C158, C159, C161, C163, C301, C304		CKSQYB104K25
	C306, C441, C442		CKSQYB152K50
	C155		CKSQYB182K50
	C170		CKSQYB332K50
	C156, C168		CKSQYB333K25
	C171, C172		CKSQYB472K50
	C307		CKSQYB473K25
	C41-C44, C202, C203, C205, C206, C353, C356, C361, C420		CKSQYF103Z50
	C410, C411, C414-C416, C418, C419, C422, C423, C431, C432		CKSQYF104Z25
	C421, C424, C426		CKSQYF473Z25
RESISTORS			
	VR151, VR152 (22k)		RCP1046
	Other Resistors		RS1/10S□□□J
OTHERS			
	CN131 12P FFC CONNECTOR		12FM-1.0BT
	CN201 6P TOP POST		B6P-SHF
	CN351 24P FFC CONNECTOR		HLEM24S
	X401 (16.9344MHz)		PSS1008
	X351 (4.19MHz)		VSS1014

Mark	No.	Description	Parts No.
DISPLAY BOARD ASSEMBLY			
SEMICONDUCTORS			
	D703-D705, D707		1SS254
SWITCHES			
	S707-S714, S716-S718		PSG1006
OTHERS			
	CN701 24P FFC CONNECTOR		HLEM24R
	V701 FL TUBE		PEL1062
POWER BOARD ASSEMBLY			
SEMICONDUCTORS			
△	IC20		M5298P
	Q62		2SC1740S
△	D1, D2		11ES2
CAPACITORS			
	C60		CEAS010M50
	C28		CEAS101M10
	C27		CEAS222M6R3
	C11-C16		CKCYF103Z50
RESISTORS			
	All Resistors		RD1/6PM□□□J
OTHERS			
	CN13 13P JUMPER CONNECTOR		KPE13
MECHANISM BOARD ASSEMBLY			
SWITCH			
	S610 PUSH SWITCH		DSG1016

6. ADJUSTMENTS

6.1 DECK AMP BLOCK (XD-J215M AND XD-J210)

6.1.1 Adjustment of Mechanical Section

- The adjustment location and the measuring location, refer to Fig. 6-4.
- Set the function switch to "TAPE".
- Test tape : STD-301 (3kHz 30min)

1. Adjustment of tape speed							
No.	Mode	Input signal & Test tape	Adjustment location		Measuring location	Adjustment value.	Remarks
1	PLAY	Playback the STD-301 tape to 3kHz.	Deck I	TAPE assembly VR4901	JP - L (Lch)	Press the PLAY button and adjust the frequency to 3010Hz $\pm$ 10Hz. Make sure that the wow and flutter is 3010Hz $\pm$ 55Hz.	
2	PLAY (Double speed mode)			—		Press the PLAY button in double speed mode and confirm that the frequency is 6000Hz $\pm$ 1000Hz. Note down the figure.	Release the double speed mode after adjustment.
3	PLAY (Double speed mode)		Deck II	TAPE assembly VR4903	JP - L (Lch)	Press the PLAY button in double speed mode and adjust the frequency to be within $\pm$ 30Hz of the figure recorded at step No. 2.	Release the double speed mode after adjustment.
4	PLAY			TAPE assembly VR4902		Press the PLAY button and adjust the frequency to 3010Hz $\pm$ 10Hz. Make sure that the wow and flutter is 3010Hz $\pm$ 55Hz.	

Double-speed mode : The double-speed mode can be entered by short circuiting the line between TP4901 and TP4902.
The mode is canceled by opening the short circuited line and switching the power to OFF.

6.1.2 Adjustment of Electrical Section

■ Check and conduct the following before adjusting the electric section.

- Adjustment of tape speed has been completed.
- Clean and demagnetize the head using a head eraser.
- When measured, the level should be 0dBV = 1Vrms.
- Use side A of the specified tape for adjustment.
STD-331E : For adjustment of playback system.
STD-631 : NORMAL blank tape
- Prepare the following measuring devices :
 - AC millivoltmeter
 - Low-frequency oscillator
 - Attenuator
 - Oscilloscope
- Adjust both L and R channels, unless specified otherwise.
- Set the DOLBY NR switches to OFF, unless specified otherwise.
- Warm up the unit for several minutes before adjustment. Especially before adjusting the frequency characteristics of recording and playback, warm up for 3 to 5 minutes in REC/PLAY mode.
- Make sure to follow the proper order of the adjustment procedure. Any change in the order may cause an improper result.

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■ List of Adjustment

Deck I

- Head azimuth adjustment
- Playback level adjustment

Deck II

- Head azimuth adjustment
- Playback level adjustment
- Bias oscillation frequency adjustment
- Recording level adjustment
- Adjustment of frequency characteristics of recording/playback

*As the reference recording level is 250nwb/m for STD-331E, the recording level will be higher by 4 dB for STD-331B (160nwb/m). When adjusting, pay carefull attention to the type of tape used.

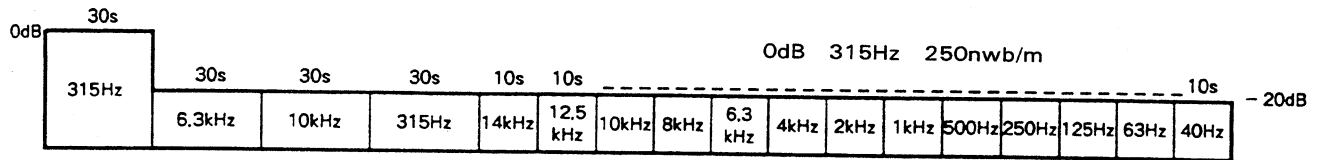


Fig. 6-1 Test Tape STD-331E

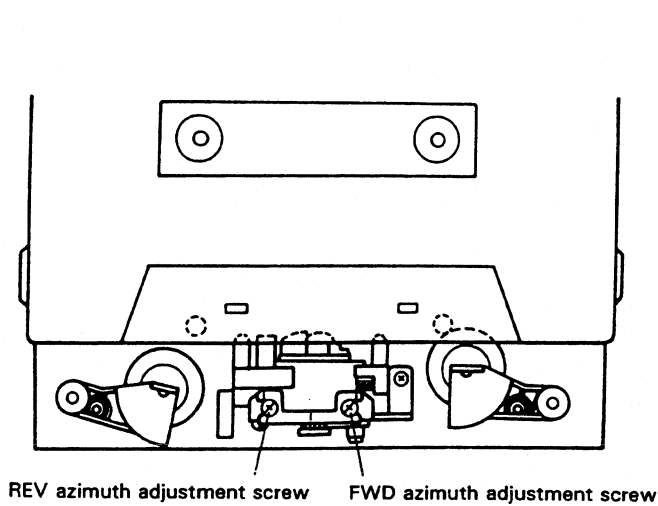
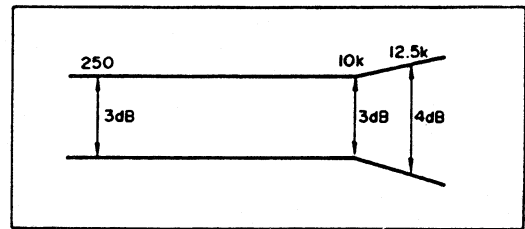


Fig. 6-2 Head Azimuth Adjustment

PLAY BACK



RECORDING

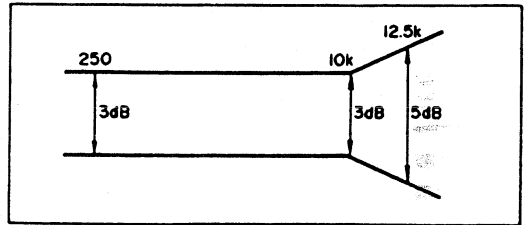


Fig. 6-3 Frequency Characteristics

Head Adjustment of Deck I

- Deck I is provided with an automatic tape selector mechanism.
- Note : Do not switch over FWD and REV while the screw driver is inserted.

1. Head Azimuth Adjustment

Pro-cedure	Tape selector (Auto)	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	PLAY	Playback the test tape STD-331E (10kHz, -20dB).	Head azimuth adjustment screw (Fig. 6-2)	DOLBY-C assembly JP-L (Lch) JP-R (Rch)	Maximum playback signal level.	Lock the screw with screw lock after completing adjustment.

2. Playback Level Adjustment

- Be sure to make a careful adjustment, as the adjustment determines the DOLBY NR level for playback.

Pro-cedure	Tape selector (Auto)	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	PLAY	Playback the test tape STD-331E (315Hz, 0dB).	TAPE assembly VR4151 (Lch) VR4152 (Rch)	DOLBY-C assembly JP-L (Lch) JP-R (Rch)	-6.3dBV	

Head Adjustment of Deck II

- Deck II is provided with an automatic tape selector mechanism.
- Note : Do not switch over FWD and REV while the screw driver is inserted.

1. Head Azimuth Adjustment

Pro-cedure	Tape selector (Auto)	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	PLAY	Playback the test tape STD-331E (10kHz, -20dB).	Head azimuth adjustment screw (Fig. 6-2)	DOLBY-C assembly JP-L (Lch) JP-R (Rch)	Maximum playback signal level.	Lock the screw with screw lock after completing adjustment.

2. Playback Level Adjustment

- Be sure to make a careful adjustment, as the adjustment determines the DOLBY NR level for playback.

Pro-cedure	Tape selector (Auto)	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	PLAY	Playback the test tape STD-331E (315Hz, 0dB).	TAPE assembly VR4121 (Lch) VR4122 (Rch)	DOLBY-C assembly JP-L (Lch) JP-R (Rch)	-6.3dBV	

3. Bias Oscillation Frequency Adjustment

Pro-cedure	Tape selector (Auto)	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	REC	Load the test tape STD-631 and set to record mode.	TAPE assembly T4351	Area between ① and ② (TAPE assembly) shown in Fig. 6-4.	The oscillation frequency is 105kHz $\pm$ 5kHz.	

4. Recording Level Adjustment

Pro-cedure	Tape selector (Auto)	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	REC	Apply a signal of 315Hz to the VCR input terminal and set the function to "VCR".	Input signal level	DOLBY-C assembly JP-L (Lch) JP-R (Rch)	-10.3dBV	
2	NORM	REC/PLAY	Record and playback the test tape STD-631 (315Hz).	TAPE assembly VR4451 (Lch) VR4452 (Rch)	DOLBY-C assembly JP-L (Lch) JP-R (Rch)	Repeat the recording/playback, and make adjustment so that the playback level of 315Hz is -10.3dBV.	

5. Adjustment of Frequency Characteristics of Recording/playback

- As this procedure is for adjustment of the recording bias, be careful not to increase the distortion by underadjusting the bias.

Procedure	Tape selector (Auto)	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	REC	Apply a signal of 315Hz to the VCR input terminal and set the function to "VCR".	Input signal level	DOLBY - C assembly JP - L (Lch) JP - R (Rch)	-30.3dBV	
2	NORM	REC/PLAY	Record and playback the test tape STD-631 (315Hz and 10kHz).	TAPE assembly VR4351 (Lch) VR4352 (Rch)	DOLBY - C assembly JP - L (Lch) JP - R (Rch)	Repeat the recording/playback, and make adjustment so that the playback level of 10kHz remains $0 \pm 0.5\text{dB}$ in relation to 315Hz.	

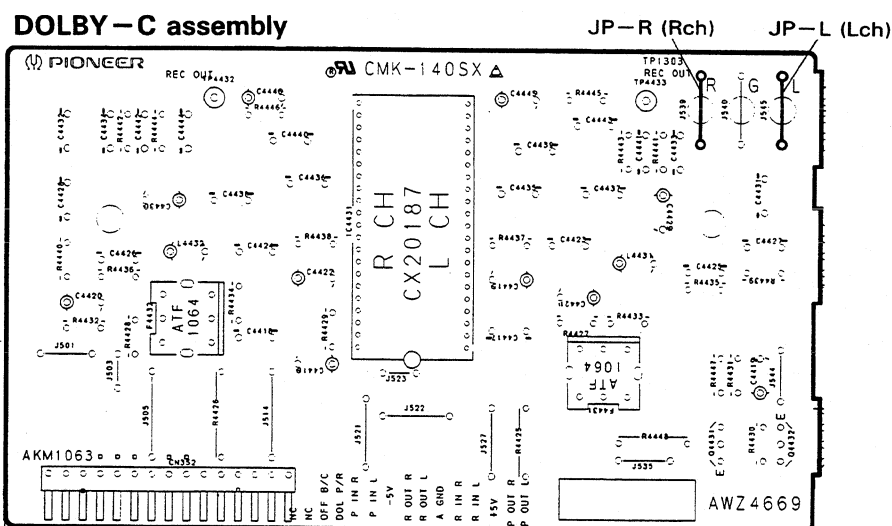
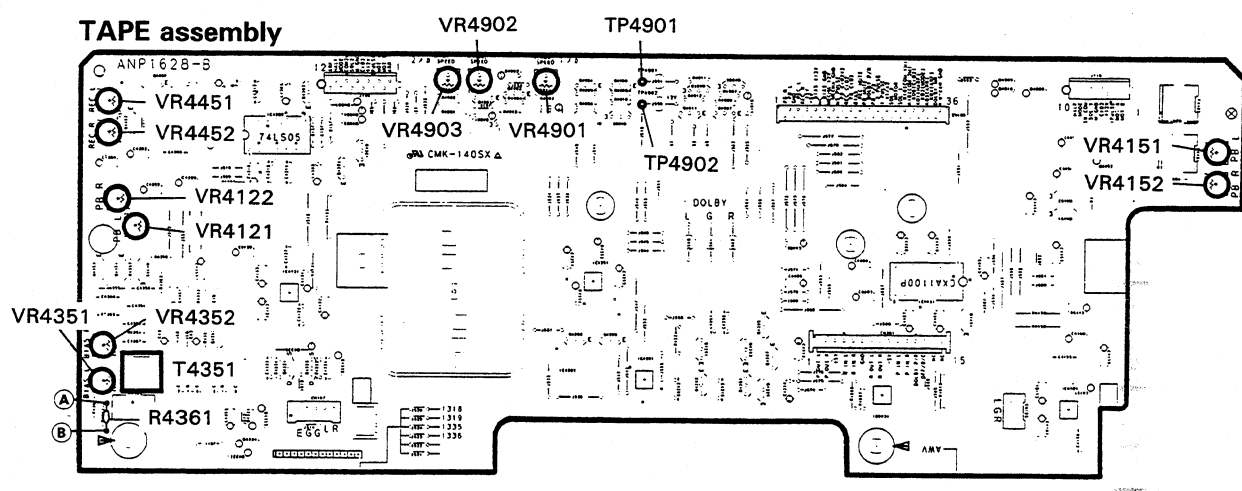


Fig. 6-4 Adjustment Points

6.2 CD BLOCK

6.2.1 Multi CD Unit (For XD-J215M)

If a disc player is adjusted incorrectly or inadequately, it may malfunction or not work at all even though there is nothing at all wrong with the pickup or the circuitry. Adjust correctly following the adjustment procedure.

● Adjustment Items/Verification Items and Order

If the specified values cannot be obtained or no adjustment is possible by performing the verifications or adjustments described in steps 1 – 4, the pickup block may be defective.

Step	Item	Test Point	Adjustment Location
1	Focus offset verification	TP1, Pin 6 (FCS. ERR)	None
2	Tracking error balance verification	TP1, Pin 2 (TRK. ERR)	None
3	Pickup radial/tangential direction tilt adjustment	TP1, Pin 1 (RF)	Radial tilt adjustment screw, Tangential tilt adjustment screw
4	RF level verification	TP1, Pin 1 (RF)	None
5	Focus servo loop gain adjustment	TP1, Pin 5 (FCS. IN) TP1, Pin 6 (FCS. ERR)	VR152 (FCS. GAN)
6	Tracking servo loop gain adjustment	TP1, Pin 3 (TRK. IN) TP1, Pin 2 (TRK. ERR)	VR151 (TRK. GAN)

● Abbreviation table

FCS. ERR	:Focus Error
TRK. ERR	:Tracking Error
FCS GAN	:Focus Gain
TRK GAN	:Tracking Gain
FCS. IN	:Focus In
TRK. IN	:Tracking In

● Measuring Instruments and Tools

1. Dual trace oscilloscope (10:1 probe)
2. Low-frequency oscillator
3. Test disc (YEDS-7)
4. Low pass filter ($39\text{k}\Omega$ $\pm 0.001\ \mu\text{F}$)
5. Resistor ($100\text{k}\Omega$)
6. Standard tools

● Test Point and Adjustment Variable Resistor Positions

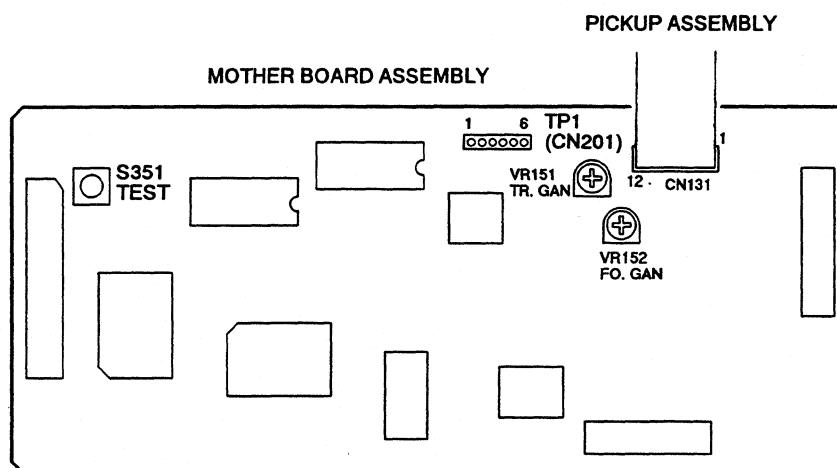


Figure 1. Adjustment Locations

● Notes

1. Use a 10:1 probe for the oscilloscope.
2. All the knob positions (settings) for the oscilloscope in the adjustment procedures are for when a 10:1 probe is used.

● Test Mode

These models have a test mode so that the adjustments and checks required for service can be carried out easily. When these models are in test mode, the keys on the front panel work differently from normal. Adjustments and checks can be carried out by operating these keys with the correct procedure. For these models, all adjustments are carried out in test mode.

[Setting these models to test mode]

How to set this model into test mode.

1. Turn off the power switch of DECK AMP.
2. Press the TEST mode switch (S351). (See Figure 1.)
3. Turn on the power switch of DECK AMP.

When the test mode is set correctly, the display is different from what it usually is when the power is turned on. If the display is still the same as usual, test mode has not been set correctly, so repeat Steps 1 – 3.

[Release from test mode]

Here is the procedure for releasing the test mode:

1. Press the STOP key and stop all operations.
2. Turn off the power switch of DECK AMP.

[Operations of the keys in test mode]

Code	Key Name	Function In Test Mode	Explanation
	PGM (PROGRAM)	Focus servo close	The laser diode is lit up and the focus actuator is lifted up, then lowered slowly and the focus servo is closed at the point where the objective lens is focused on the disc. With the player in this state, if you lightly rotate the stopped disc by hand, you can hear the sound the focus servo. If you can hear this sound, the focus servo is operating correctly. If you press this key with no disc mounted, the laser diode lights up, the focus actuator is pulled up, then the actuator is lowered and raised three times and returned to its original position.
▶ / ||	PLAY/PAUSE	Spindle servo ON	Starts the spindle motor in the clockwise direction and when the disc rotation reaches the prescribed speed (about 500 rpm at the inner periphery), sets the spindle servo in a closed loop. Be careful. Pressing this key when there is no disc mounted makes the spindle motor run at the maximum speed. If the focus servo does not go correctly into a closed loop or the laser light shines on the mirror section at the outermost periphery of the disc, the same symptom is occurred.
▶ / ||	PLAY/PAUSE	Tracking servo close/open	Pressing this key when the focus servo and spindle servo are operating correctly in closed loops puts the tracking servo into a closed loop, displays the track number being played back and the elapsed time on the front panel, and outputs the playback signal. If the elapsed time is not displayed or not counted correctly or the audio is not played back correctly, it may be that the laser is shining on the section with no sound recorded at the outer edge of the disc, that something is out of adjustment, or that there is some other problem. This key is a toggle key and open/close the tracking servo alternately. This key has no effect if no disc is mounted.

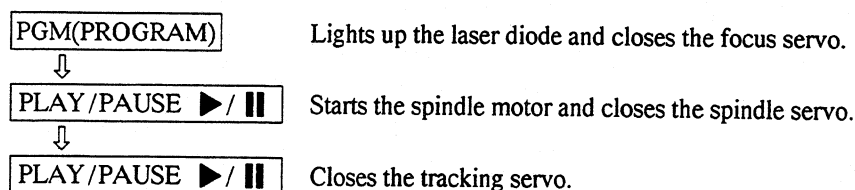
Code	Key Name	Function In Test Mode	Explanation
	MANUAL / TRACK SEARCH REV	Carriage reverse (inwards)	Moves the pickup position toward the inner diameter of the disc. When this key is pressed with the tracking servo in a closed loop, the tracking servo automatically goes into an open loop. Since the motor does not automatically stop at the mechanical end point in test mode, be careful with this operation.
	MANUAL / TRACK SEARCH FWD	Carriage forward (outwards)	Moves the pickup position toward the outer diameter of the disc. When this key is pressed with the tracking servo in a closed loop, the tracking servo automatically goes into an open loop. Since the motor does not automatically stop at the mechanical end point in test mode, be careful with this operation.
	STOP	Stop	Initializes and the disc rotation stops. The pickup and disc remain where they are when this key is pressed.
	EJECT	CD magazine eject	Stores Disc 1 in the CD magazine, then ejects the CD magazine. However, even though the CD magazine is ejected, the pickup does not return to the park position. Even if the CD magazine is mounted again, the pickup remains where it is.

Note : When inserting the magazine, disc 1 of the magazine is loaded automatically.

[How to play back a disc in test mode]

In test mode, since the servos operate independently, playing back a disc requires that you operate the keys in the correct order to close the servos.

Here is the key operation sequence for playing back a disc in test mode.



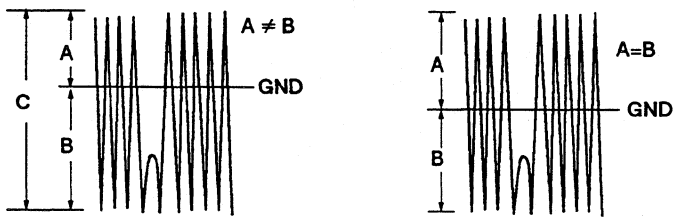
Wait at least 2-3 seconds between each of these operations.

1. Focus Offset Verification

● Objective	Verify the DC offset for the focus error amp.		
● Symptom when out of adjustment	The model does not focus in and the RF signal is dirty.		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 6 (FCS. ERR)	● Player state	Test mode, stopped (just the Power switch on)
	[Settings] 5 mV/division 10 ms/division DC mode	● Adjustment location ● Disc	None None needed
[Procedure] Verify the DC voltage at TP1, Pin 6 (FCS. ERR) is 0 ± 50 mV.			

Note : If the specified values cannot be obtained or no adjustment is possible by performing the verifications or adjustments described in adjustment items 1 – 4, the pickup block may be defective.

2. Tracking Error Balance Verification

● Objective	To verify that there is no variation in the sensitivity of the tracking photo diode.		
● Symptom when out of adjustment	Play does not start or track search is impossible.		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 2 (TRK. ERR). This connection may be via a low pass filter.	● Player state	Test mode, focus and spindle servos closed and tracking servo open
	[Settings] 50 mV/division 5 ms/division DC mode	● Adjustment location ● Disc	None YEDS-7
[Procedure] 1. Move the pickup to midway across the disc (R=35 mm) with the MANUAL / TRACK SEARCH FWD ►► • ►► or REV ◄◄ • ◄◄ key. 2. Press the PGM (PROGRAM) key, then the PLAY/PAUSE ► / || key in that order to close the focus servo then the spindle servo. 3. Line up the bright line (ground) at the center of the oscilloscope screen and put the oscilloscope into DC mode. 4. Supposing that the positive amplitude of the tracking error signal at TP1, pin 2 (TRK ERR) is (A) and the negative amplitude is (B), the following expression is satisfied.			
When $A \geq B$, $\frac{A-B}{C} \times \frac{1}{2} \leq 0.1$ When $A < B$, $\frac{B-A}{C} \times \frac{1}{2} \leq 0.1$		 When there is a DC component When there is no DC component	

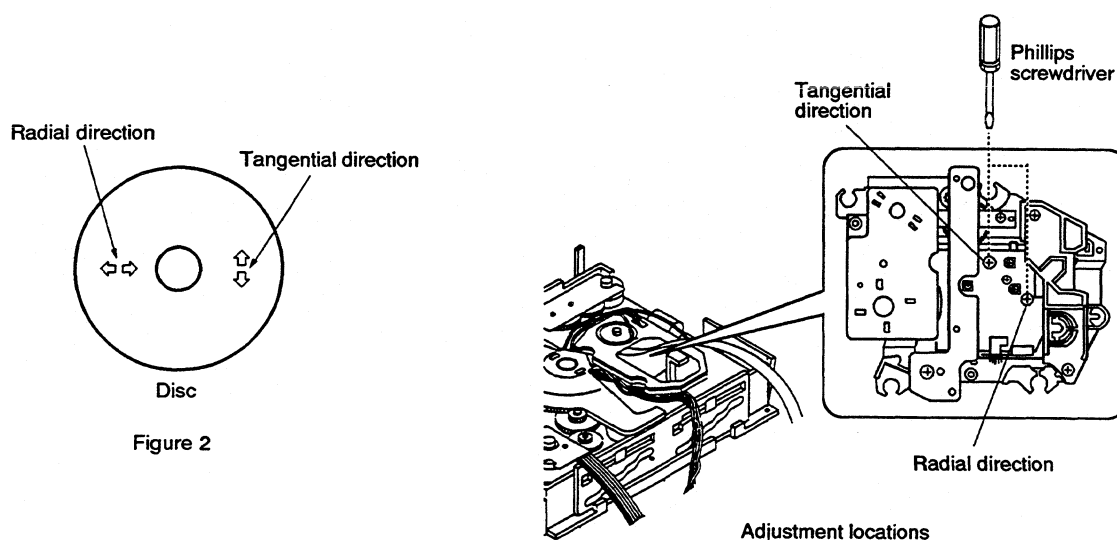
3. Pickup Radial/Tangential Tilt Adjustment

● Objective	To adjust the angle of the pickup relative to the disc so that the laser beams are shone straight down into the disc for the best read out of the RF signals.		
● Symptom when out of adjustment	Sound broken; some discs can be played but not others.		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 1 (RF).	● Player state	Test mode, play
	[Settings] 20 mV/division 200 ns/division AC mode	● Adjustment location	Pickup radial tilt adjustment screw and tangential tilt adjustment screw
		● Disc	YEDS-7

[Procedure]

1. Press the MANUAL / TRACK SEARCH FWD ►► • ►► or REV |◄◄ • ◄◄ key to move the pickup to halfway across the disc (R=35mm).
Press the PGM (PROGRAM) key, the PLAY/PAUSE ► / || key twice in that order to close the respective servos and put the player into play mode.
2. First, adjust the radial tilt adjustment screw with a Phillips screwdriver so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly.
3. Next, adjust the tangential tilt adjustment screw with a Phillips screwdriver so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly (Figure 3).
4. Adjust the radial tilt adjustment screw and the tangential tilt adjustment screw again so that the eye pattern can be seen the most clearly. As necessary, adjust the two screws alternately so that the eye pattern can be seen the most clearly.
5. When the adjustment is completed, lock the radial and tangential adjustment screw.

Note: Radial and tangential mean the directions relative to the disc shown in Figure 2.



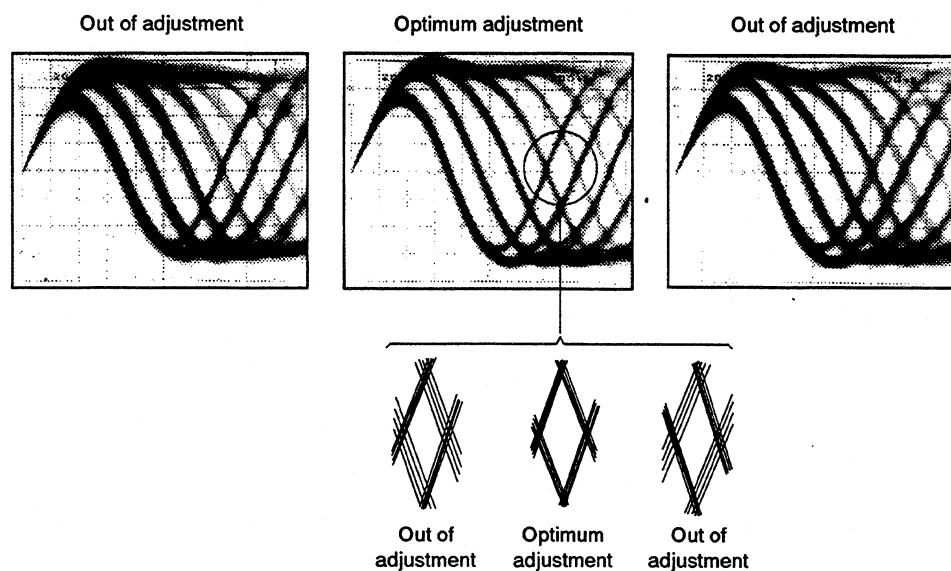


Figure 3. Eye pattern

4. RF Level Verification

● Objective	To verify the playback RF signal amplitude		
● Symptom when out of adjustment	No play or no search		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 1 (RF).	● Player state	Test mode, play
	[Settings] 50 mV/division 10 ms/division AC mode	● Adjustment location	None
		● Disc	YEDS-7
[Procedure] 1. Move the pickup to midway across the disc (R=35 mm) with the MANUAL / TRACK SEARCH FWD ►► • ►► or REV ◀◀ • ◀◀ key, then press the PGM (PROGRAM) key, the PLAY/PAUSE ► / || key twice in that order to close the respective servos and put the player into play mode. 2. Verify the RF signal amplitude is $1.2 \text{ V}_{p-p} \pm 0.2 \text{ V}$.			

5. Focus Servo Loop Gain Adjustment

● Objective	To optimize the focus servo loop gain.		
● Symptom when out of adjustment	Playback does not start or focus actuator noisy.		
● Measurement instrument connections	See figure 4. [Settings] CH1 20 mV/division X-Y mode	● Player state	Test mode, play
		● Adjustment location	VR152 (FCS. GAN)
		● Disc	YEDS-7

[Procedure]

1. Set the AF generator output to 1.2 kHz and 1 Vp-p.
2. Press the MANUAL / TRACKSEARCH FWD ►► • ►► or REV |◄◄ • ◄◄ key to move the pickup to halfway across the disc (R=35 mm), then press the PGM (PROGRAM) key, the PLAY/PAUSE ► / || key twice in that order to close the corresponding servos and put the player into play mode.
3. Adjust VR152 (FCS. GAN) so that the Lissajous waveform is symmetrical about the X axis and the Y axis.

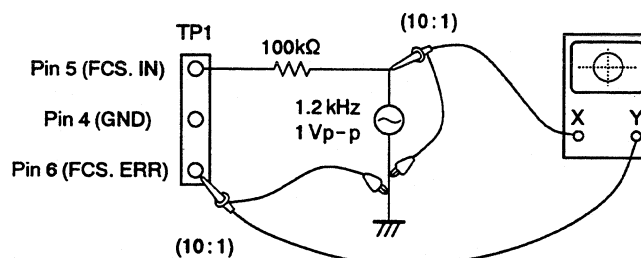
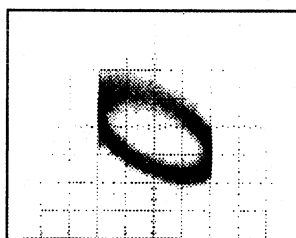
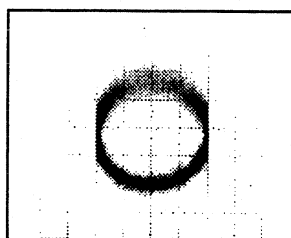


Figure 4

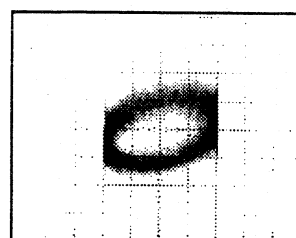
Focus Gain Adjustment



Higher gain



Optimum gain



Lower gain

6. Tracking Servo Loop Gain Adjustment

● Objective	To optimize the tracking servo loop gain.		
● Symptom when out of adjustment	Playback does not start, during searches the actuator is noisy, or tracks are skipped.		
● Measurement instrument connections	See Figure 5.	● Player state	Test mode, play
	[Settings] CH1 50 mV/division X-Y mode CH2 20 mV/division X-Y mode	● Adjustment location ● Disc	VR151 (TRK. GAN) YEDS-7

- [Procedure]
1. Set the AF generator output to 1.2 kHz and 2 Vp-p.
 2. Press the MANUAL / TRACK SEARCH FWD ►► • ►► or REV ◀◀ • ◀◀ key to move the pickup to halfway across the disc (R=35 mm), then press the PGM (PROGRAM) key, the PLAY/PAUSE ► / || key twice in that order to close the corresponding servos and put the player into play mode.
 3. Adjust VR151 (TRK. GAN) so that the Lissajous waveform is symmetrical about the X axis and the Y axis.

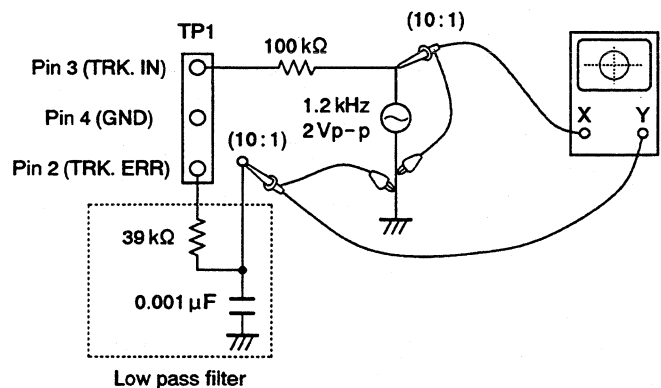
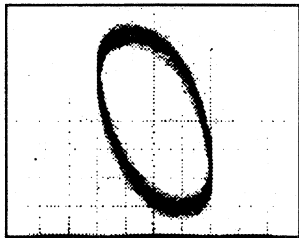
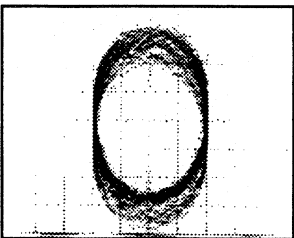


Figure 5

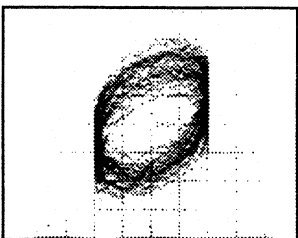
Tracking Gain Adjustment



Higher gain



Optimum gain



Lower gain

6.2.2 Single CD Unit (For XD—J210)

● Adjustment Methods

If a disc player is adjusted incorrectly or inadequately, it may malfunction or not work at all even though there is nothing at all wrong with the pickup or the circuitry. Adjust correctly following the adjustment procedure.

● Adjustment Items/Verification Items and Order

If the specified values cannot be obtained or no adjustment is possible by performing the verifications or adjustments described in steps 1 — 4, the pickup block may be defective.

Step	Item	Test Point	Adjustment Location
1	Focus offset verification	TP1, Pin 6 (FCS. ERR)	None
2	Tracking error balance verification	TP1, Pin 2 (TRK. ERR)	None
3	Pickup radial/tangential direction tilt adjustment	TP1, Pin 1 (RF)	Radial tilt adjustment screw, Tangential tilt adjustment screw
4	RF level verification	TP1, Pin 1 (RF)	None
5	Focus servo loop gain adjustment	TP1, Pin 5 (FCS. IN) TP1, Pin 6 (FCS. ERR)	VR152 (FCS. GAN)
6	Tracking servo loop gain adjustment	TP1, Pin 3 (TRK. IN) TP1, Pin 2 (TRK. ERR)	VR151 (TRK. GAN)

● Abbreviation table

FCS. ERR	:Focus Error
TRK. ERR	:Tracking Error
FCS GAN	:Focus Gain
TRK GAN	:Tracking Gain
FCS. IN	:Focus In
TRK. IN	:Tracking In

● Measuring Instruments and Tools

1. Dual trace oscilloscope (10:1 probe)
2. Low-frequency oscillator
3. Test disc (YEDS-7, 8cm disc)
4. Resistor (100 k Ω)
5. Standard tools

● Test Point and Adjustment Variable Resistor Positions

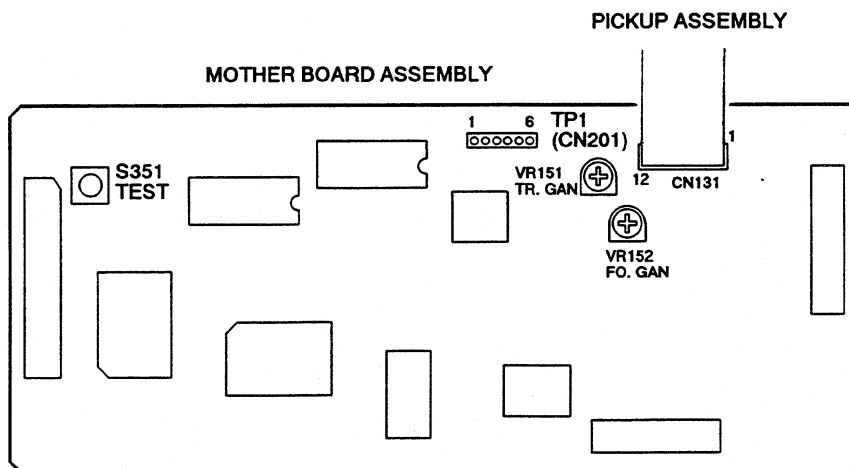


Figure 1. Adjustment Locations

● Notes

1. Use a 10:1 probe for the oscilloscope.
2. All the knob positions (settings) for the oscilloscope in the adjustment procedures are for when a 10:1 probe is used.

● Test Mode

These models have a test mode so that the adjustments and checks required for service can be carried out easily. When these models are in test mode, the keys on the front panel work differently from normal. Adjustments and checks can be carried out by operating these keys with the correct procedure. For these models, all adjustments are carried out in test mode.

[Setting these models to test mode]

How to set this model into test mode.

1. Turn off the power switch of DECK AMP.
2. Press the TEST mode switch (S351). (See Figure 1.)
3. Turn on the power switch of DECK AMP.

When the test mode is set correctly, the display is different from what it usually is when the power is turned on. If the display is still the same as usual, test mode has not been set correctly, so repeat Steps 1 – 3.

[Release from test mode]

Here is the procedure for releasing the test mode:

1. Press the STOP key and stop all operations.
2. Turn off the power switch of DECK AMP.

[Operations of the keys in test mode]

Code	Key Name	Function In Test Mode	Explanation
	PROGRAM	Focus servo close	The laser diode is lit up and the focus actuator is lifted up, then lowered slowly and the focus servo is closed at the point where the objective lens is focused on the disc. With the player in this state, if you lightly rotate the stopped disc by hand, you can hear the sound the focus servo. If you can hear this sound, the focus servo is operating correctly. If you press this key with no disc mounted, the laser diode lights up, the focus actuator is pulled up, then the actuator is lowered and raised three times and returned to its original position.
▶/||	PLAY/PAUSE	Spindle servo ON	Starts the spindle motor in the clockwise direction and when the disc rotation reaches the prescribed speed (about 500 rpm at the inner periphery), sets the spindle servo in a closed loop. Be careful. Pressing this key when there is no disc mounted makes the spindle motor run at the maximum speed. If the focus servo does not go correctly into a closed loop or the laser light shines on the mirror section at the outermost periphery of the disc, the same symptom is occurred.
▶/||	PLAY/PAUSE	Tracking servo close/open	Pressing this key when the focus servo and spindle servo are operating correctly in closed loops puts the tracking servo into a closed loop, displays the track number being played back and the elapsed time on the front panel, and outputs the playback signal. If the elapsed time is not displayed or not counted correctly or the audio is not played back correctly, it may be that the laser is shining on the section with no sound recorded at the outer edge of the disc, that something is out of adjustment, or that there is some other problem. This key is a toggle key and open/close the tracking servo alternately. This key has no effect if no disc is mounted.

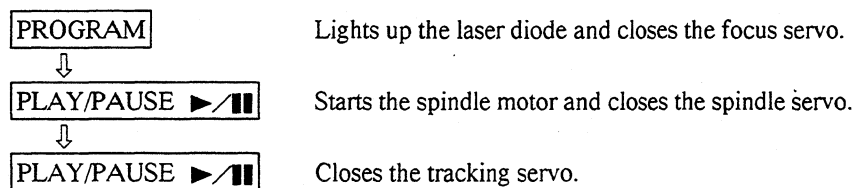
Code	Key Name	Function in Test Mode	Explanation
◀◀• ◀◀	MANUAL/ TRACK SEARCH REV	Carriage reverse (inwards)	Moves the pickup position toward the inner diameter of the disc. When this key is pressed with the tracking servo in a closed loop, the tracking servo automatically goes into an open loop. Since the motor does not automatically stop at the mechanical end point in test mode, be careful with this operation.
▶▶• ▶▶	MANUAL/ TRACK SEARCH FWD	Carriage forward (outwards)	Moves the pickup position toward the outer diameter of the disc. When this key is pressed with the tracking servo in a closed loop, the tracking servo automatically goes into an open loop. Since the motor does not automatically stop at the mechanical end point in test mode, be careful with this operation.
■	STOP	Stop	Initializes and the disc rotation stops. The pickup and disc remain where they are when this key is pressed.
▲	OPEN/CLOSE	Disc tray open / close	Stores Disc 1 in the CD magazine, then ejects the CD magazine. However, even though the CD magazine is ejected, the pickup does not return to the park position. Even if the CD magazine is mounted again, the pickup remains where it is.

Note : When inserting the magazine, disc 1 of the magazine is loaded automatically.

[How to play back a disc in test mode]

In test mode, since the servos operate independently, playing back a disc requires that you operate the keys in the correct order to close the servos.

Here is the key operation sequence for playing back a disc in test mode.



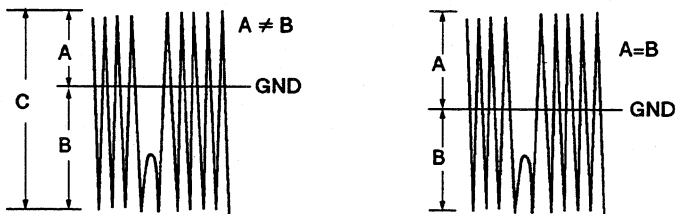
Wait at least 2-3 seconds between each of these operations.

1. Focus Offset Verification

● Objective	Verify the DC offset for the focus error amp.		
● Symptom when out of adjustment	The model does not focus in and the RF signal is dirty.		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 6 (FCS. ERR)	● Player state	Test mode, stopped (just the Power switch on)
	[Settings] 5 mV/division 10 ms/division DC mode	● Adjustment location	None
		● Disc	None needed
[Procedure] Verify the DC voltage at TP1, Pin 6 (FCS. ERR) is 0 ± 50 mV.			

Note : If the specified values cannot be obtained or no adjustment is possible by performing the verifications or adjustments described in adjustment items 1 – 4, the pickup block may be defective.

2. Tracking Error Balance Verification

● Objective	To verify that there is no variation in the sensitivity of the tracking photo diode.		
● Symptom when out of adjustment	Play does not start or track search is impossible.		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 2 (TRK. ERR). This connection may be via a low pass filter.	● Player state	Test mode, focus and spindle servos closed and tracking servo open
	[Settings] 50 mV/division 5 ms/division DC mode	● Adjustment location	None
		● Disc	YEDS-7
[Procedure] 1. Move the pickup to midway across the disc (R=35 mm) with the MANUAL / TRACK SEARCH FWD ►► . ►► or REV ◄◄ . ◄◄ key. 2. Press the PGM (PROGRAM) key, then the PLAY/PAUSE ► / || key in that order to close the focus servo then the spindle servo. 3. Line up the bright line (ground) at the center of the oscilloscope screen and put the oscilloscope into DC mode. 4. Supposing that the positive amplitude of the tracking error signal at TP1, pin 2 (TRK ERR) is (A) and the negative amplitude is (B), the following expression is satisfied.			
When $A \geq B$, $\frac{A-B}{C} \times \frac{1}{2} \leq 0.1$ When $A < B$, $\frac{B-A}{C} \times \frac{1}{2} \leq 0.1$		 When there is a DC component When there is no DC component	

2. Tracking Error Balance Verification

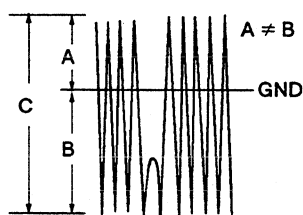
● Objective	To verify that there is no variation in the sensitivity of the tracking photo diode.		
● Symptom when out of adjustment	Play does not start or track search is impossible.		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 2 (TRK. ERR). This connection may be via a low pass filter. [Settings] 50 mV/division 5 ms/division DC mode	● Player state ● Adjustment location ● Disc	Test mode, focus and spindle servos closed and tracking servo open None YEDS-7

[Procedure]

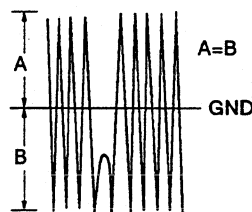
1. Move the pickup to midway across the disc (R=35 mm) with the MANUAL/TRACK SEARCH FWD $\blacktriangleright\blacktriangleright \cdot \blacktriangleright\blacktriangleright$ or $\blacktriangleleft\blacktriangleleft \cdot \blacktriangleleft\blacktriangleleft$ key.
2. Press the PROGRAM key, then the PLAY/PAUSE $\blacktriangleright/\parallel$ key in that order to close the focus servo then the spindle servo.
3. Line up the bright line (ground) at the center of the oscilloscope screen and put the oscilloscope into DC mode.
4. Supposing that the positive amplitude of the tracking error signal at TP1, pin 2 (TRK ERR) is (A) and the negative amplitude is (B), the following expression is satisfied.

$$\text{When } A \geq B, \frac{A-B}{C} \times \frac{1}{2} \leq 0.1$$

$$\text{When } A < B, \frac{B-A}{C} \times \frac{1}{2} \leq 0.1$$



When there is a DC component



When there is no DC component

3. Pickup Radial/Tangential Tilt Adjustment

● Objective	To adjust the angle of the pickup relative to the disc so that the laser beams are shone straight down into the disc for the best read out of the RF signals.		
● Symptom when out of adjustment	Sound broken;some discs can be played but not others.		
● Measurement instrument connections	Connect the oscilloscope to TPI, Pin 1 (RF). [Settings] 20 mV/division 200 ns/division AC mode	● Player state ● Adjustment location ● Disc	Test mode, play Pickup radial tilt adjustment screw and tangential tilt adjustment screw 8 cm disc (However, those with approx. 20 min of audio signal (music).)

[Procedure]

1. Press the MANUAL / TRACK SEARCH FWD ►► • ►► or ◀◀ • ◀◀ key to move the pickup to the external circumference of the disc.
Press the PROGRAM key, the PLAY/PAUSE ►/|| key, then the PLAY/PAUSE ►/|| key in that order to close the respective servos and put the player into play mode.
2. First, adjust the radial tilt adjustment screw with a hexagonal wrench so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly.
3. Next, adjust the tangential tilt adjustment screw with a ball-point type hexagonal wrench so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly (Figure 3).
※ The ball-point type hexagonal wrench is used because the disc will get in the way if a normal hexagonal wrench is used.
4. Adjust the radial tilt adjustment screw and the tangential tilt adjustment screw again so that the eye pattern can be seen the most clearly. As necessary, adjust the two screws alternately so that the eye pattern can be seen the most clearly.
5. When the adjustment is completed, lock the radial and tangential adjustment screw.

Note:Radial and tangential mean the directions relative to the disc.

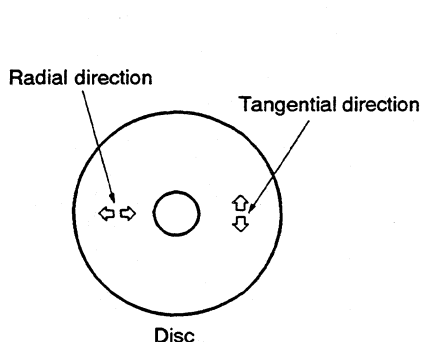
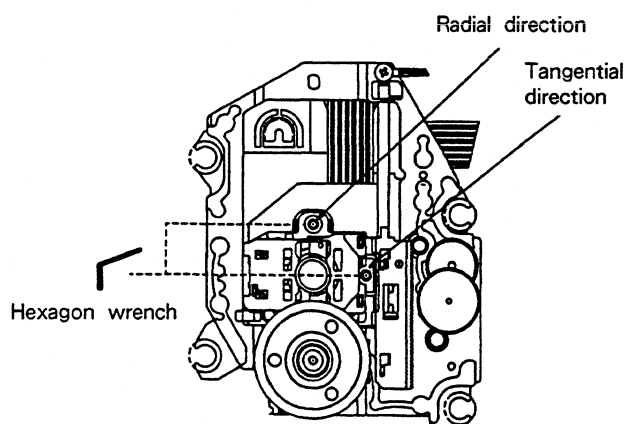


Figure 2



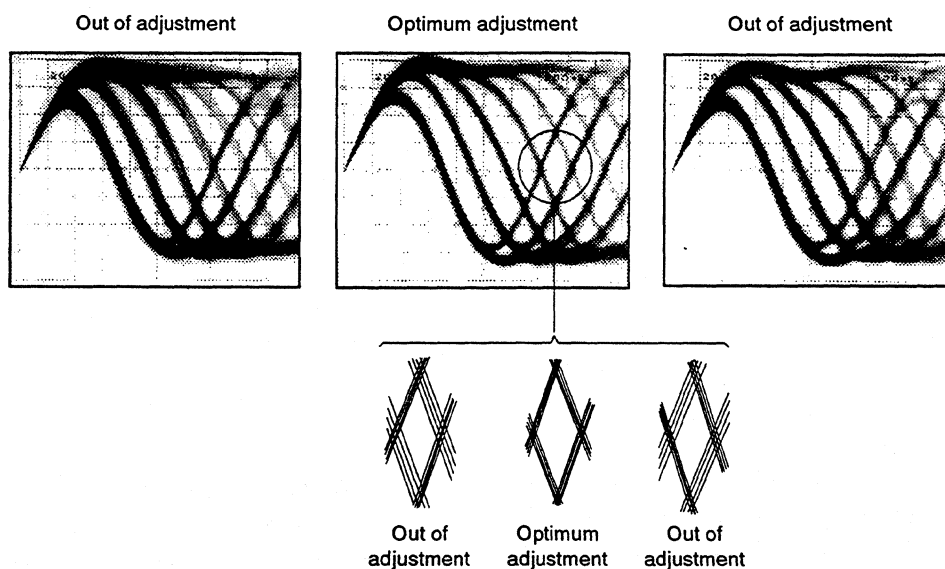


Figure 3 Eye pattern

4. RF Level Verification

● Objective	To verify the playback RF signal amplitude		
● Symptom when out of adjustment	No play or no search		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 1 (RF).	● Player state	Test mode, play
	[Settings] 50 mV/division 10 ms/division AC mode	● Adjustment location	None
		● Disc	YEDS-7
[Procedure] 1. Move the pickup to midway across the disc (R=35 mm) with the MANUAL/TRACK SEARCH FWD ►► • ►► or ◀◀ • ◀◀ key, then press the PROGRAM key, the PLAY/PAUSE ►/|| key, then the PLAY/PAUSE ►/|| key in that order to close the respective servos and put the player into play mode. 2. Verify the RF signal amplitude is $1.2 V_{p-p} \pm 0.2 V$.			

5. Focus Servo Loop Gain Adjustment

● Objective	To optimize the focus servo loop gain.		
● Symptom when out of adjustment	Playback does not start or focus actuator noisy.		
● Measurement instrument connections	See figure 4.	● Player state	Test mode, play
	[Settings]	● Adjustment location	VR152 (FCS. GAN)
	CH1 CH2 20 mV/division 5 mV/division X-Y mode	● Disc	YEDS-7

[Procedure]

- 1. Set the AF generator output to 1.2 kHz and 1 Vp-p.
- 2. Press the MANUAL/TRACK SEARCH FWD ►► • ►► or ►► • ◄◄ key to move the pickup to halfway across the disc (R=35 mm), then press the PROGRAM key, the PLAY/PAUSE ►/|| key, then the PLAY/PAUSE ►/|| key in that order to close the corresponding servos and put the player into play mode.
- 3. Adjust VR152 (FCS. GAN) so that the Lissajous waveform is symmetrical about the X axis and the Y axis.

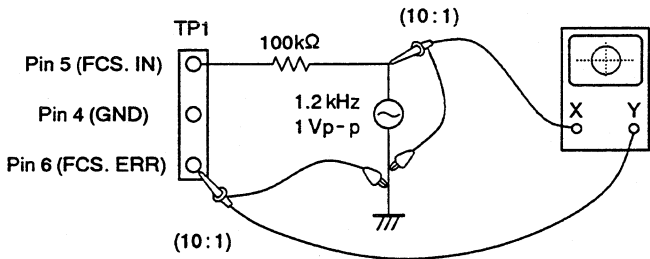
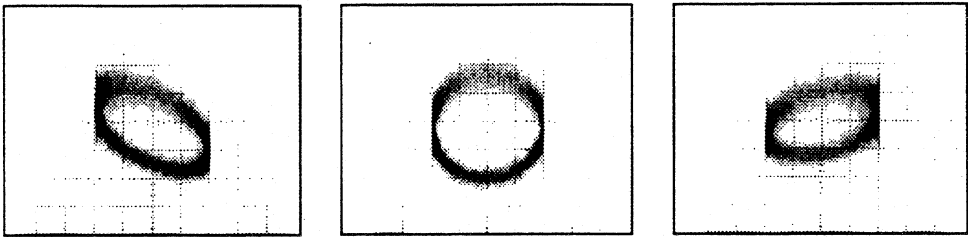


Figure 4

Focus Gain Adjustment



Higher gain

Optimum gain

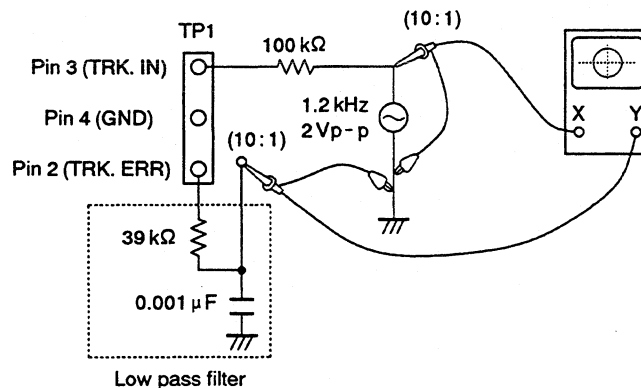
Lower gain

6. Tracking Servo Loop Gain Adjustment

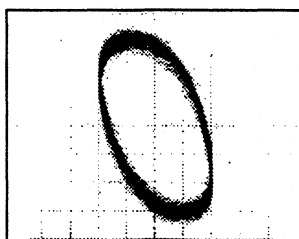
● Objective	To optimize the tracking servo loop gain.		
● Symptom when out of adjustment	Playback does not start, during searches the actuator is noisy, or tracks are skipped.		
● Measurement instrument connections	See Figure 5.	● Player state	Test mode, play
	[Settings] CH1 50 mV/division X - Y mode CH2 20 mV/division X - Y mode	● Adjustment location VR151 (TRK. GAN) ● Disc YEDS-7	

[Procedure]

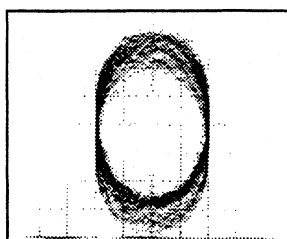
1. Set the AF generator output to 1.2 kHz and 2 Vp-p.
2. Press the MANUAL/TRACK SEARCH FWD $\blacktriangleright \blacktriangleright \blacktriangleright$ or $\blacktriangleleft \blacktriangleleft \blacktriangleleft$ key to move the pickup to halfway across the disc (R=35 mm), then press the PROGRAM key, the PLAY/PAUSE $\blacktriangleright / \blacksquare$ key, then the PLAY/PAUSE $\blacktriangleright / \blacksquare$ key in that order to close the corresponding servos and put the player into play mode.
3. Adjust VR151 (TRK. GAN) so that the Lissajous waveform is symmetrical about the X axis and the Y axis.



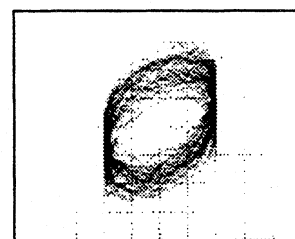
Tracking Gain Adjustment



Higher gain



Optimum gain



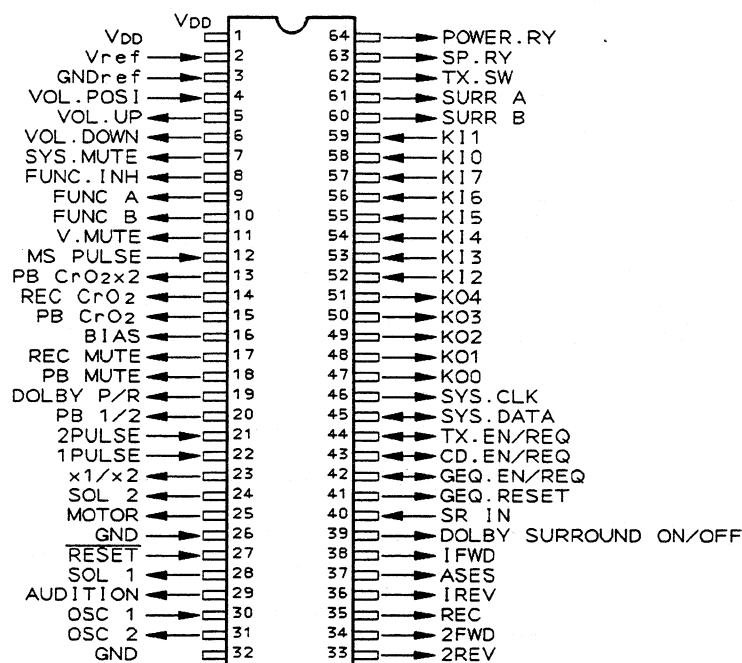
Lower gain

7. IC INFORMATION

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

5.1 PD5214A (IC1901 : AF Assembly)

- System Control Micro-computer
- Pin Assignment (Top View)



Pin Function

Pin No.	Pin Name	I/O	Function Name	Description												
1	VCC	—	VDD	Connected to +5V power supply.												
2	VREF	—	VREF	Connected to +5V power supply. Reference voltage of A/D, D/A.												
3	AVSS	—	GND REF	Connected GND. Reference voltage of A/D, D/A.												
4	P67/AN7	I	VOL. POSI	A/D input port for MAIN VOLUME positioning detection.												
5	P66/AN6	O	VOL. UP	Output control for MAIN VOLUME UP.												
6	P65/AN5	O	VOL. DOWN	Output control for MAIN VOLUME DOWN.												
7	P64/AN4	O	SYS. MUTE	SYSTEM MUTE (MAIN and REAR) ON/OFF												
8	P63/AN3	O	FUNC INH	TC4052 and CXA1558 control terminal <table><tr><td></td><td>P5</td><td>P6</td></tr><tr><td>UP</td><td>H</td><td>L</td></tr><tr><td>DOWN</td><td>L</td><td>H</td></tr><tr><td>STOP</td><td>L</td><td>L</td></tr></table>		P5	P6	UP	H	L	DOWN	L	H	STOP	L	L
	P5	P6														
UP	H	L														
DOWN	L	H														
STOP	L	L														
9	P62/AN2	O	FUNC A													
10	P61/AN1	O	FUNC B													
11	P60/AN0	O	V. MUTE													

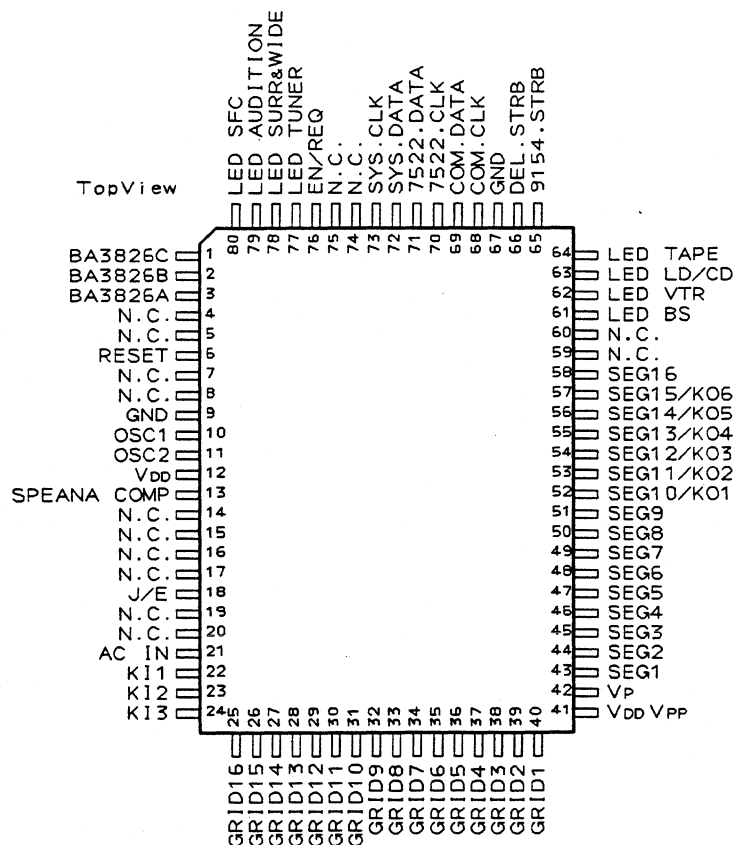
Pin No.	Pin Name	I/O	Function Name	Description
12	P57/INT4	I	MS PULSE	Comparator input for music search.
13	P56/INT3	O	PB CrO2 × 2	Switching CrO2 and PB EQ when HI – SPEED COPY.
14	P55/CNTR1	O	REC CrO2	Switching REC Amp CrO2. ON/OFF
15	P54/CNTR0	O	PB CrO2	Switching PB Amp CrO2. ON/OFF
16	P53/SRDY2	O	BIAS	BIAS oscillation ON/OFF
17	P52/SCLK2	O	REC MUTE	REC MUTE ON/OFF
18	P51/SOUT2	O	PB MUTE	PB MUTE ON/OFF
19	P50/SIN2	O	DOLBY P/R	DOLBY IC PB/REC
20	P47/SRDY1	O	PB 1/2	Switching PB 1 Mecha/2 mecha
21	P46/SCLK1	I	2 PULSE	2 mecha REEL PULSE input
22	P45/TxD	I	1 PULSE	1 mecha REEL PULSE input
23	P44/RxD	O	× 1/× 2	Switching SPEED × 1/× 2
24	P43/INT2	O	SOL2	2 mecha SOL H : ON
25	P42/INT1	O	MOTOR	MOTOR ON/OFF
26	CNVss	–	GND	GND
27	RESET	I	RESET	Reset input : Reset by the input of more than 4 clocks.
28	P41/INT0	O	SOL1	1 mecha SOL H : ON
29	P40	O	AUDITION	AUDITION circuit ON/OFF
30	XIN	I	OSC1	Clock
31	XOUT	O	OSC2	
32	Vss	–	GND	GND
33	P27/DB7	O	2REV	LED control ON/OFF
34	P26/DB6	O	2FWD	
35	P25/DB5	O	REC	
36	P24/DB4	O	1REV	
37	P23/DB3	O	ASES	
38	P22/DB2	O	1FWD	
39	P21/DB1	O	DOLBY SURROUND	DOLBY SURROUND ON/OFF
40	P20/DB0	I	SR IN	Remote control signal input terminal.
41	P17/AD15	O	GEQ. RESET	Reset output of PDC009A.

Pin No.	Pin Name	I/O	Function Name	Description																																																						
42	P16/AD14	I/O	GEQ. EN/REQ	System bus																																																						
43	P15/AD13	I/O	CD. EN/REQ																																																							
44	P14/AD12	I/O	TX. EN/REQ																																																							
45	P13/AD11	I/O	SYS. DATA																																																							
46	P12/AD10	O	SYS. CLK																																																							
47	P11/AD9	O	KO0	<table><tr><td></td><td>KO0</td><td>KO1</td><td>KO2</td><td>KO3</td><td>KO4</td></tr><tr><td>KI0</td><td>1 CrO2</td><td>1 HARF</td><td>1 MODE</td><td>—</td><td>—</td></tr><tr><td>KI1</td><td>2 CrO2</td><td>2 HARF</td><td>2 MODE</td><td>2 ARR</td><td>2 ARF</td></tr><tr><td>KI2</td><td>REC PAUSE</td><td>ASES</td><td>REC MUTE</td><td>×2 COPY</td><td>×1 COPY</td></tr><tr><td>KI3</td><td>2 PLAY</td><td>2 REV</td><td>2 STOP</td><td>1 F.F</td><td>1 REW</td></tr><tr><td>KI4</td><td>2 F.F</td><td>2 REW</td><td>1 STOP</td><td>1 PLAY</td><td>1 REV</td></tr><tr><td>KI5</td><td>POWER</td><td>AI. MEMO</td><td>—</td><td>—</td><td>—</td></tr><tr><td>KI6</td><td>FUNCTION CYCLIC</td><td>AI. BGM (START/SET)</td><td>—</td><td>—</td><td>—</td></tr><tr><td>KI7</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td></tr></table>		KO0	KO1	KO2	KO3	KO4	KI0	1 CrO2	1 HARF	1 MODE	—	—	KI1	2 CrO2	2 HARF	2 MODE	2 ARR	2 ARF	KI2	REC PAUSE	ASES	REC MUTE	×2 COPY	×1 COPY	KI3	2 PLAY	2 REV	2 STOP	1 F.F	1 REW	KI4	2 F.F	2 REW	1 STOP	1 PLAY	1 REV	KI5	POWER	AI. MEMO	—	—	—	KI6	FUNCTION CYCLIC	AI. BGM (START/SET)	—	—	—	KI7	—	—	—	—	—
	KO0	KO1	KO2		KO3	KO4																																																				
KI0	1 CrO2	1 HARF	1 MODE		—	—																																																				
KI1	2 CrO2	2 HARF	2 MODE		2 ARR	2 ARF																																																				
KI2	REC PAUSE	ASES	REC MUTE		×2 COPY	×1 COPY																																																				
KI3	2 PLAY	2 REV	2 STOP		1 F.F	1 REW																																																				
KI4	2 F.F	2 REW	1 STOP		1 PLAY	1 REV																																																				
KI5	POWER	AI. MEMO	—		—	—																																																				
KI6	FUNCTION CYCLIC	AI. BGM (START/SET)	—		—	—																																																				
KI7	—	—	—		—	—																																																				
48	P10/AD8	O	KO1																																																							
49	P07/AD7	O	KO2																																																							
50	P06/AD6	O	KO3																																																							
51	P05/AD5	O	KO4																																																							
52	P04/AD4	I	KI2																																																							
53	P03/AD3	I	KI3																																																							
54	P02/AD2	I	KI4																																																							
55	P01/AD1	I	KI5																																																							
56	P00/AD0	I	KI6																																																							
57	P37/RD	I	KI7																																																							
58	P36/WR	I	KI0																																																							
59	P35/SYNC	I	KI1																																																							
60	P34/0	O	SURR A	Control terminal for MC14052. <table><tr><td>WIDE</td><td>A</td><td>B</td></tr><tr><td>OFF</td><td>L</td><td>L</td></tr><tr><td>1</td><td>H</td><td>H</td></tr><tr><td>2</td><td>L</td><td>H</td></tr><tr><td>3</td><td>H</td><td>H</td></tr></table>	WIDE	A	B	OFF	L	L	1	H	H	2	L	H	3	H	H																																							
WIDE	A	B																																																								
OFF	L	L																																																								
1	H	H																																																								
2	L	H																																																								
3	H	H																																																								
61	P33 / RESET _{OUT}	O	SURR B																																																							
62	P32/ONW	O	TX. SW	Power supply for TUNER. ON/OFF																																																						
63	P31/DA2	O	SP. RY	Protection relay ON/OFF																																																						
64	P30/DA1	O	POWER RY	Relay for main transformer ON/OFF																																																						

WIDE	A	B
OFF	L	L
1	H	H
2	L	H
3	H	H

5.2 PDC009A (IC3901 : DISPLAY Ass'y)

- System Control Micro-computer (GEQ μ -COM)
- Pin Assignment (Top View)



● Pin Function

Pin No.	Pin Name	I/O	Function Name	Description
1	P35	O	BA3826 C	Control BA3826 A, B, C are all reset by "H".
2	P36	O	BA3826 B	
3	P37	O	BA3826 A	
4	PWM1	O		OPEN
5	TEST1	O		
6	$\overline{\text{RES}}$	I	RESET	Reset terminal
7	XT1	I		Connected to VDD.
8	XT2	O		OPEN
9	VSS		VSS	GND
10	CF1	I	OSC1	Input terminal for ceramic resonator.

XD-J215M, XD-J210

Pin No.	Pin Name	I/O	Function Name	Description
11	CF2	O	OSC2	Output terminal for ceramic resonator.
12	VDD		VDD	Power supply (+) terminal
13	P80/AN0	I	SPEANA COMP IN	Changes the BA3826 SOUSE output to SPEANA.
14	P81/AN1			Not used
15	P82/AN2			
16	P83/AN3			
17	P84/AN4			
18	P85/AN5	I	J/EX	PULL DOWN : Export. FL displays MOVIE.
19	P86/AN6			Not used
20	P87/AN7			
21	P70/INT0	I	AC IN	AC detection terminal
22	P71/INT1	I	KI1	Key scan input 3IN × 6OUT
23	P72/INT2/TOIN	I	KI2	
24	P73/INT3/TOIN	I	KI3	
25 | 40	SO/T0 | SI5/T15	O | O	GRID 16 | GRID 1	Output terminal for FL GRID.
41	VDDVPP		VDDVPP	Power supply (–) terminal for FL.
42	VP		VP	Power supply (–) terminal for pull-down resistor for FL.
43 | 51	S16 | S24	O | O	S1 | S9	Output terminal for FL segment.
52 | 57	S25 | S30	O | O	SI0/KO1 | SI5/KO6	output terminal for FL segment and Key scan output.
58	S31	O	SI6	Not used
59	PO0	O	SURROUND	
60	PO1	O	SUPER BASS	
61	PO2	O	LED BS	LED control
62	PO3	O	LED VTR	
63	PO4	O	LED LD/CD	
64	PO5	O	LED TAPE	
65	P06	O	9154 STB	STROB output for TC9154.
66	P07	O	DEL STB	Not used

Pin No.	Pin Name	I/O	Function Name	Description
67	VSS		VSS	Connected to GND.
68	P10/S00	O	COM. CLK	CLOCK output for TC9154.
69	P11/SIO/SB0	O	COM. DATA	DATA output for TC9154.
70	P12/SCK0	O	7522. CLK	CLOCK output for LC7522.
71	P13/SO1	O	7522. DATA	DATA output for LC7522.
72	P14/SI1/SB1	I/O	SYS. DATA	System bus for DECK AMP micro-computer.
73	P15/SCK	I	SYS. CLK	
74	P16/BUZ			Not used
75	P17/PWM0			
76	P30	I/O	GEQ EN/REQ	System bus for DECK AMP micro-computer.
77	P31	O	LED TUNER	LED control ON/ $\overline{\text{OFF}}$
78	P32	O	LED SURR & WIDE	
79	P33	O	LED AUDITION	
80	P34	O	LED SFC	

	KI1	KI2	KI3
KO1	SFC THEATER	GEQ LEVEL UP	GEQ FREQ UP
KO2	SFC DISCO/B	GEQ FREQ DOWN	GEQ LEVEL DOWN
KO3	SFC HALL/C	GEQ MODE	DOLBY SURROUND ON/OFF
KO4	SFC MEMORY	PRESET /PROGRAM	REAR LEVEL UP
KO5	SFC CLEAR	GEQ ON/OFF	REAR LEVEL DOWN
KO6	—	AUDITION ON/OFF	SURROUND & WIDE

8. FOR XD-J215M/HB, HEWZIW, XD-J210/HB AND HEWZIW TYPES

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

8.1 FOR XD-J215M/HB AND HEWZIW

Contrast of Miscellaneous Parts

XD-J215M/HB, HEWZIW and HE have the same construction except for the following :

Mark	Symbol & Description	Part No.			Remarks
		HE type	HB type	HEWZIW type	
NSP	AF assembly	AWZ4648	AWZ4648	AWZ4649	S1-A 47089
	VOLUME assembly	AWZ4655	AWZ4655	AWZ4655	
	HEADPHONE assembly	AWZ4666	AWZ4666	AWZ4667	
	SURROUND assembly	AWM1445	AWM1445	AWM1449	
	TRANS CONNECT assembly	AWZ4672	AWZ4672	AWZ4673	
	SUB TRANS assembly	AWZ4678	AWZ4681	AWZ4679	
Δ	AC Power cord	ADG1127	ADG1118	ADG1127	
Δ	Strain relief	.....	AEC-882	.....	
NSP	Rear panel	ANC2008	ANC2009	ANC2008	
	Screw (GND)	.....	.....	ABA1047	
	Name plate	AAL2014	AAL2013	AAL2015	
	Operating instructions (English, French, German, Italian)	ARE1266	.....	.....	
	Operating instructions (Dutch, Swedish, Spanish, Portuguese)	ARE1267	.....	.....	
	Operating instructions (English)	.....	ARB1409	.....	
	Operating instructions (German, Italian)	.....	.....	ARC1399	

VOLUME Assembly

AWZ4656 and AWZ 4655 have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWZ4655	AWZ4656	
	C1513, C1514	.....	CCPUSL330J50	
	C1557	.....	CCSQCH101J50	
	R1559	.....	RD1/8PM102J	

AF Assembly

AWZ4649 and AWZ 4648 have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWZ4648	AWZ4649	
	L1201, L1202, L1301 L1302	ATH-133	ATH-059 ATH-059	
	C1219, C1220	.....	CKDYF473Z50	
	C1221, C1222, C1311, C1312	.....	CKCYB103K50	
	C1223, C1224	.....	CCPUSL470J50	
	C1317	.....	CKCYF473Z50	
	C2101, C2102, C2307, C2308, C3303, C3304, C3501, C3502	.....	CCSQCH101J50	
	C2201-C2206, C2301, C2302	.....	CCSQCH391J50	
	C2208-2210	.....	CKCYB391K50	
	C2303, C2304	.....	CKSQYB222K50	
	C2305, C2306	CCSQCH101J50	.....	
	C2319, C2320, C2503, C2504	.....	CKSQYB472K50	
	C2321, C2322	.....	CKSQYB102K50	
	R1215, R1216, R1311	RD1/4PMFL100J	RD1/4PMFL101J	
	R1217, R1218	.....	RD1/4PM100J	
	R1313	.....	RD1/8PM100J	
	R2301, R2302	RS1/10S221J	RS1/10S102J	
	2P Pin jack	AKB1146	AKB1100	

TRANS CONNECT Assembly

AWZ4673 and AWZ4672 have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWZ4672	AWZ4673	
	C1160, C1161	.....	CQMXA104J100	

SUB TRANS Assembly

AWZ4681, AWZ4679 and AWZ4678 have the same construction except for the following :

Mark	Symbol & Description	Part No.			Remarks
		AWZ4678	AWZ4681	AWZ4679	
	L1101	.....	.....	ATF-151	
	C1162	.....	.....	CQMXA104J100	
	CN 1P AC inlet	AKP1121	.....	AKP1121	

XD-J215M, XD-J210

HEADPHONE Assembly

AWZ4667 and AWZ4666 have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWZ4666	AWZ4667	
	C1243, C1244, C1249, C1250 C1245, C1246, C1248	..... .....	CKPUYB101K50 CKPUYF473Z16	

SURROUND Assembly

AWM1449 and AWM1445 have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWM1445	AWM1449	
	C3431, C3432	.....	CKPUYB101K50	

8.2 FOR XD-J210/HB AND HEWZIW

Contrast of Miscellaneous Parts

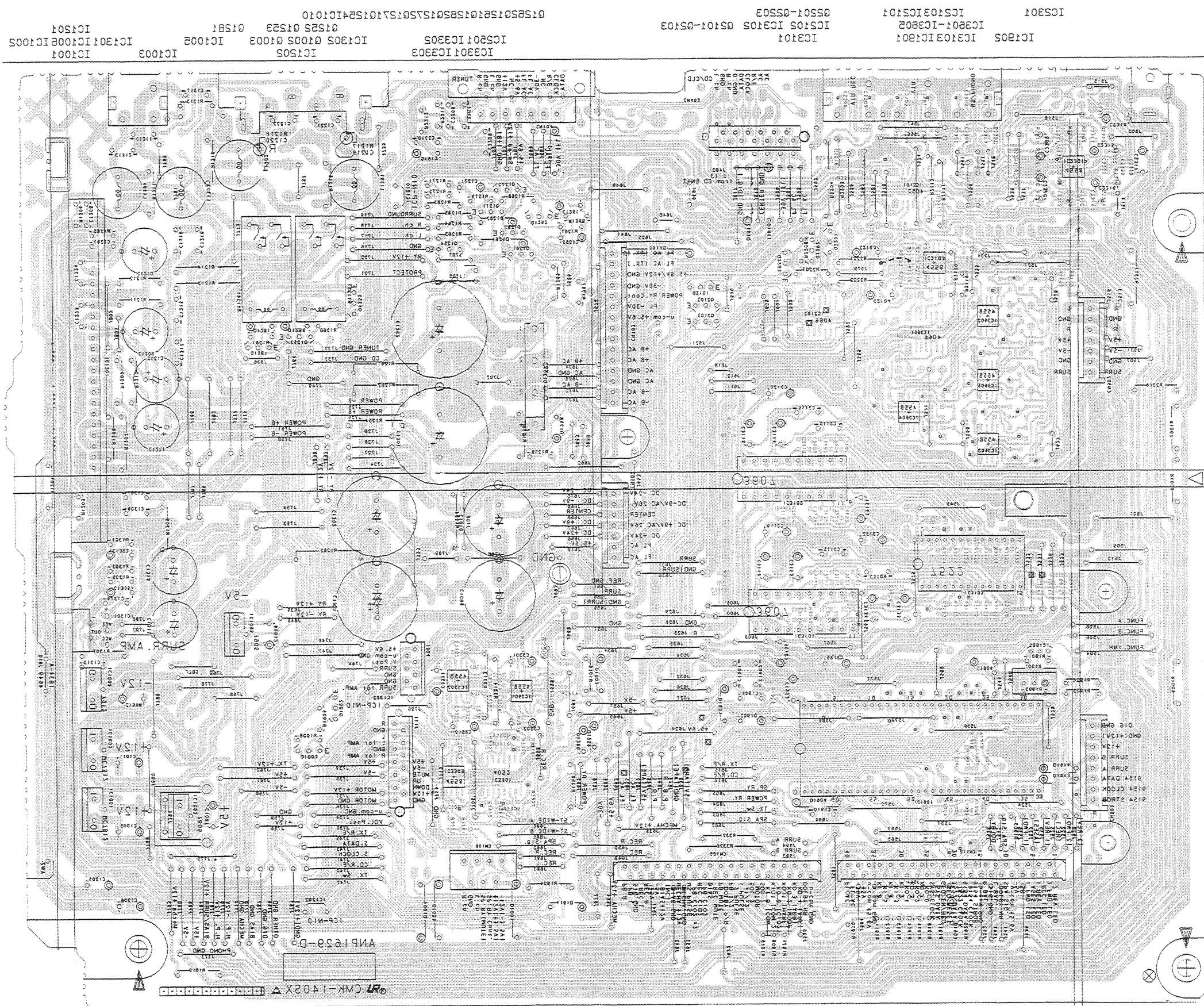
XD-J210/HB, HEWZIW and HE have the same construction except for the following :

Mark	Symbol & Description	Part No.			Remarks
		HE type	HB type	HEWZIW type	
NSP	AF assembly	AWZ4648	AWZ4648	AWZ4649	
	VOLUME assembly	AWZ4655	AWZ4655	AWZ4656	
	HEADPHONE assembly	AWZ4666	AWZ4666	AWZ4667	
	SURROUND assembly	AWM1445	AWM1445	AWM1449	
	TRANS CONNECT assembly	AWZ4672	AWZ4672	AWZ4673	
	SUB TRANS assembly	AWZ4678	AWZ4681	AWZ4679	
△	AC Power cord	ADG1127	ADG1118	ADG1127	
△	Strain relief	.....	AEC-882	.....	
NSP	Rear panel	ANC2008	ANC2009	ANC2008	
	Screw (GND)	.....	.....	ABA1047	
	Name plate	AAL2011	AAL2010	AAL2012	
	Operating instructions (English, French, German, Italian)	ARE1264	.....	.....	
	Operating instructions (Dutch, Swedish, Spanish, Portuguese)	ARE1265	.....	.....	
	Operating instructions (English)	.....	ARB1408	.....	
	Operating instructions (German, Italian)	.....	.....	ARC1398	

Note : All assemblies of XD-J210/HB and HEWZIW are the same as those of XD-J215M/HB and HEWZL.
Refer to "8.1 XD-J215M/HB AND HEWZIW".

8.3.1 AF Assembly
(For XD-1215M\HEWSIW and XD-1210\HEWSIW)

This PCB connection diagram is viewed from the foil side.



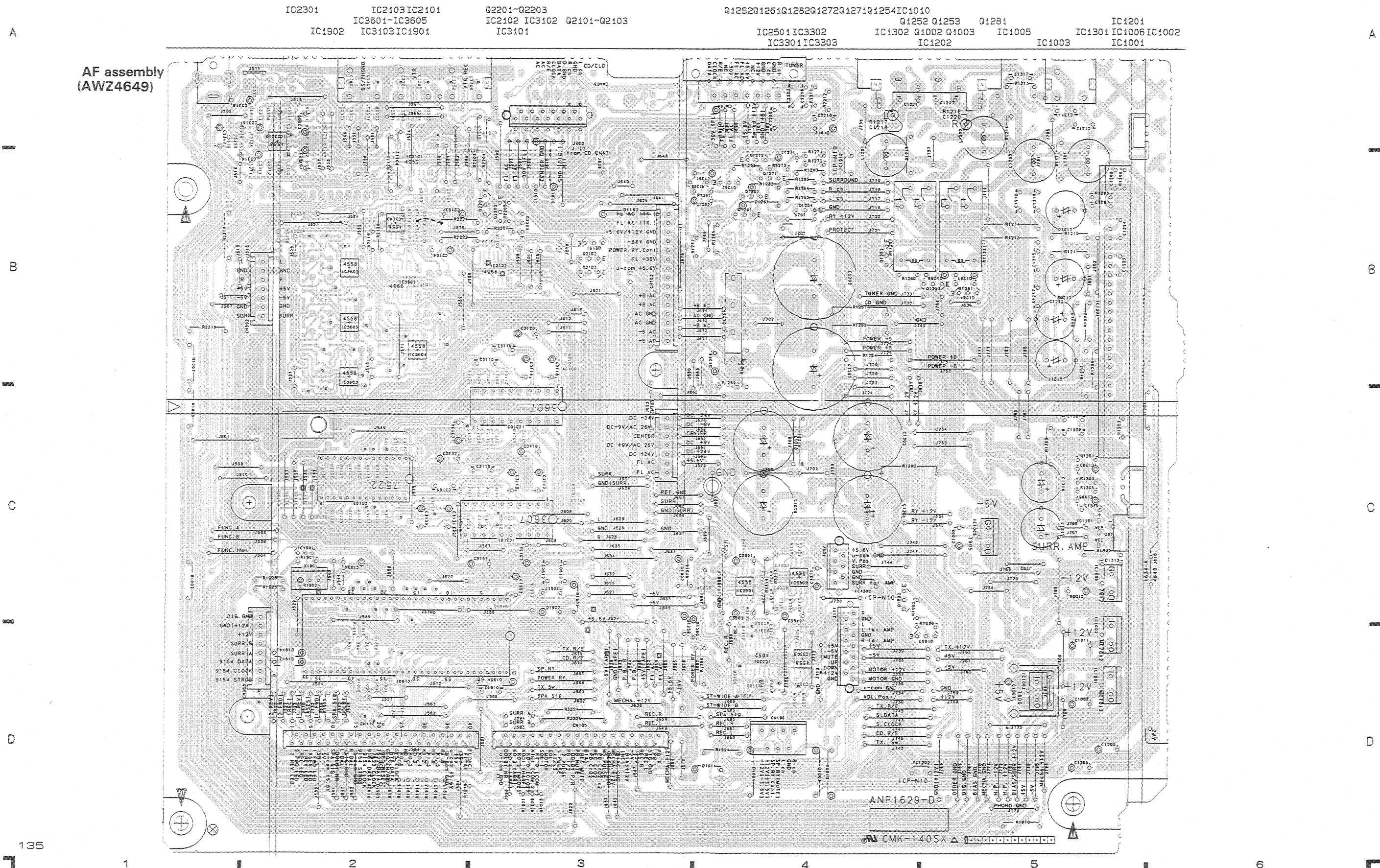
AF assembly
(AWΣ4649)

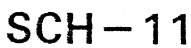
8.3 SCHEMATIC DIAGRAMS AND PCB PATTRENS

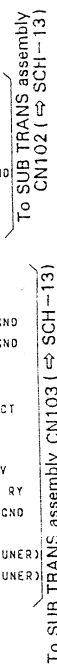
(For XD-J215M/HEWZIW and XD-J210/HEWZIW)

8.3.1 AF Assembly

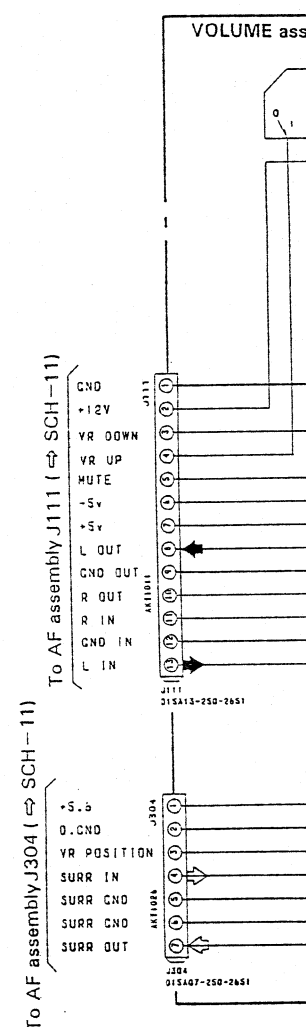
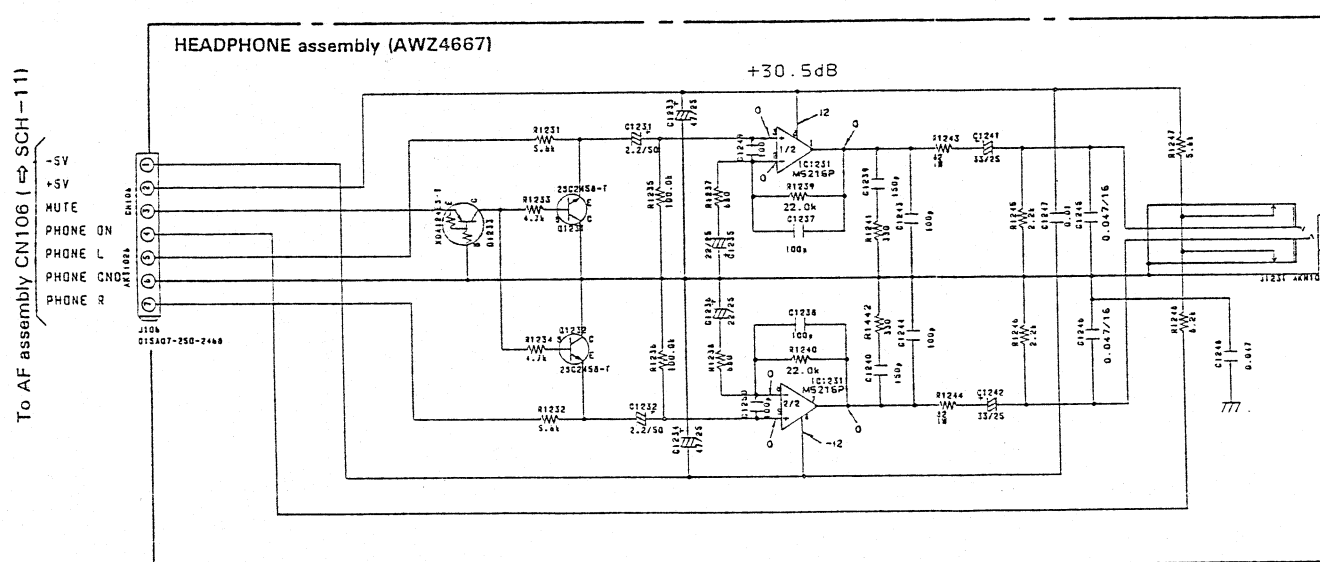
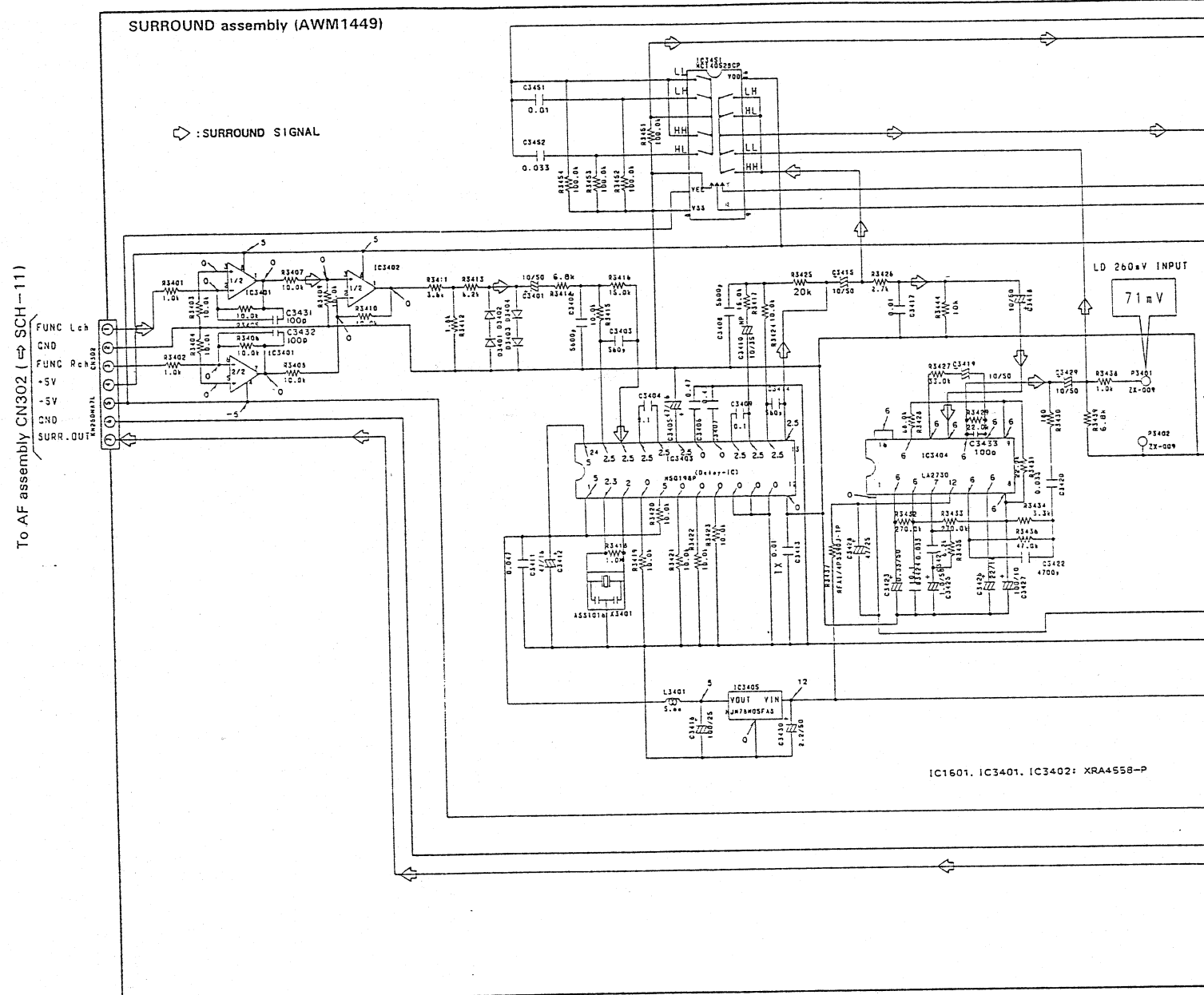
This PCB connection diagram is viewd from the parts mounted side.

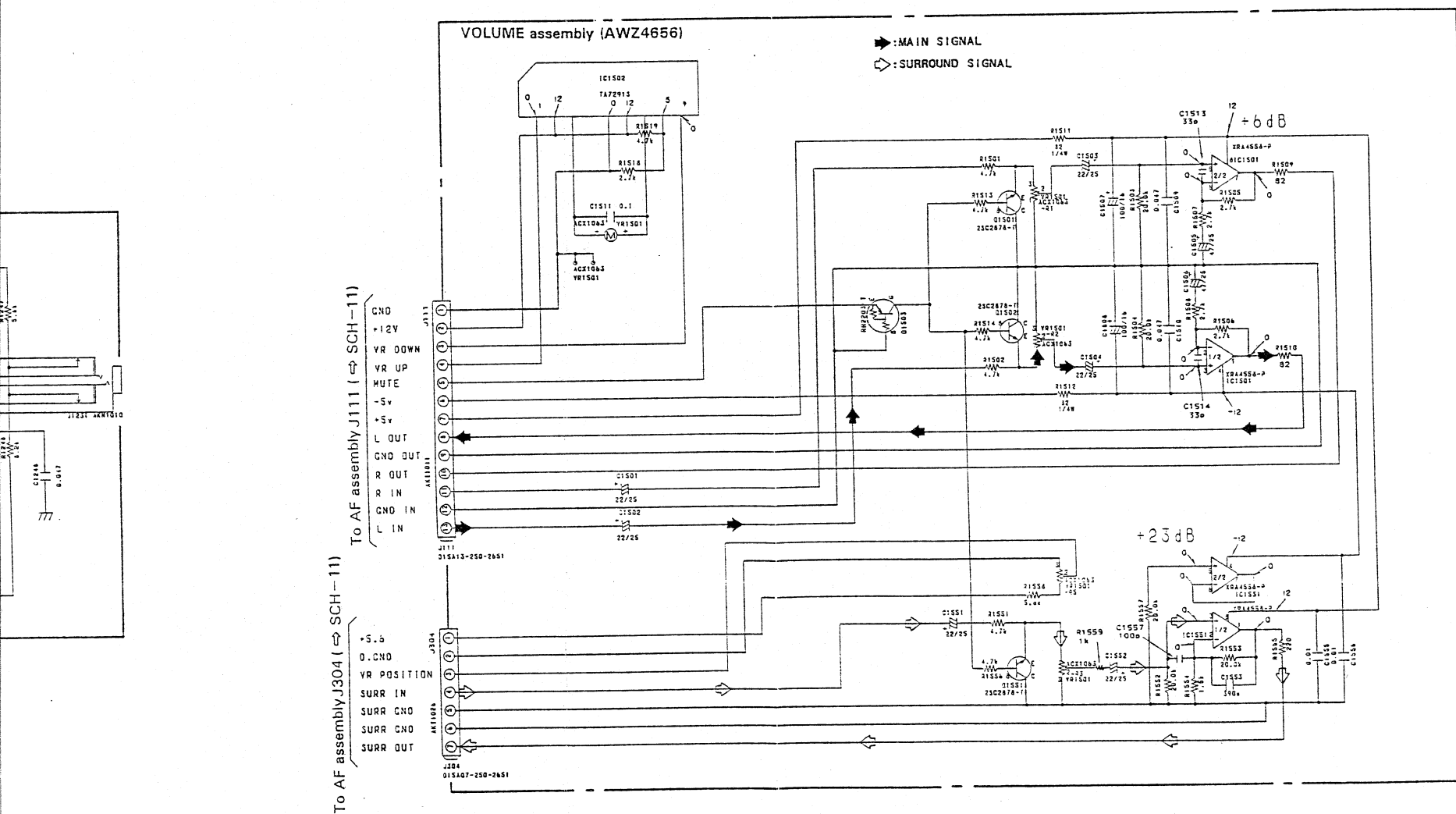
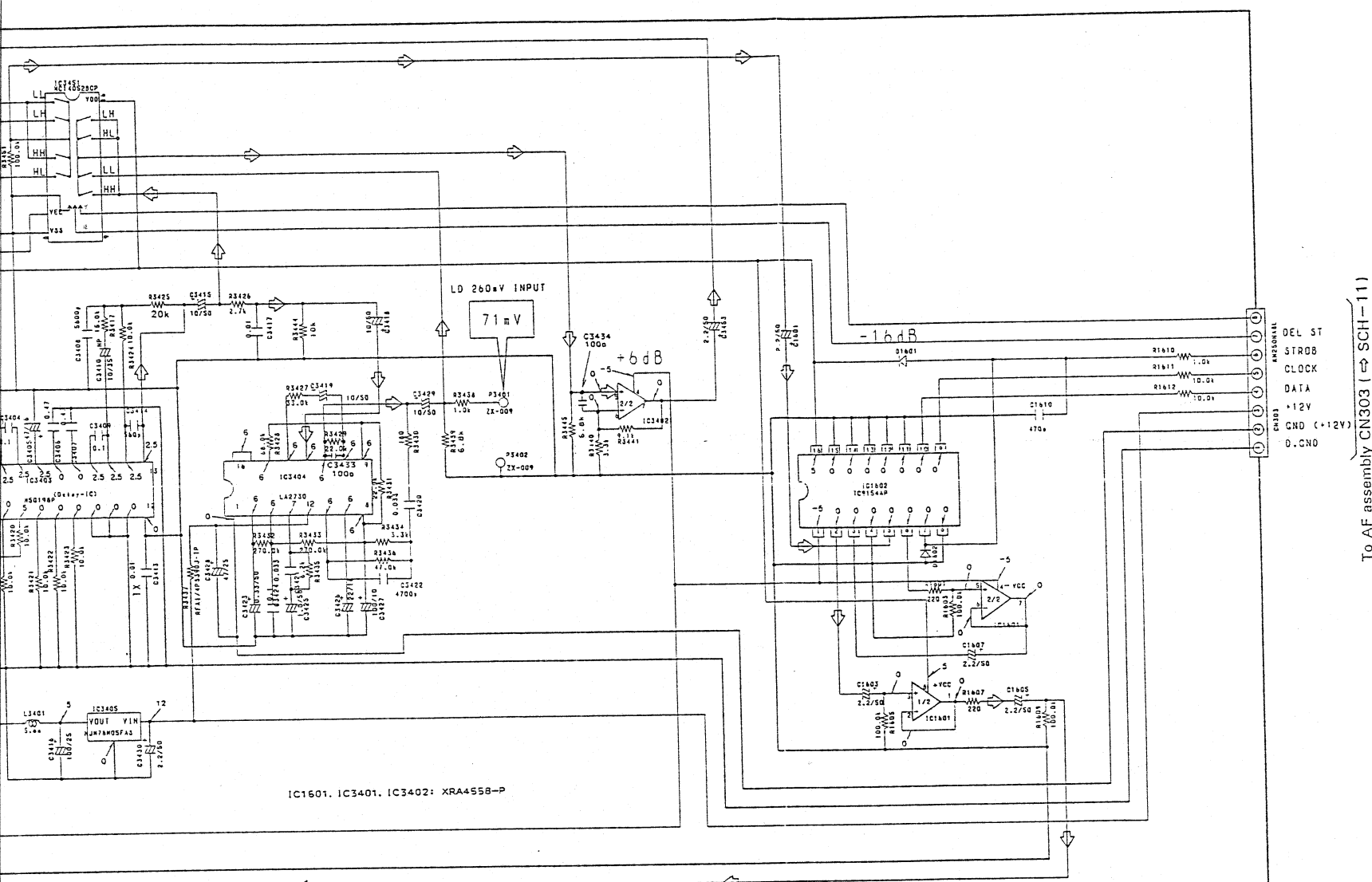






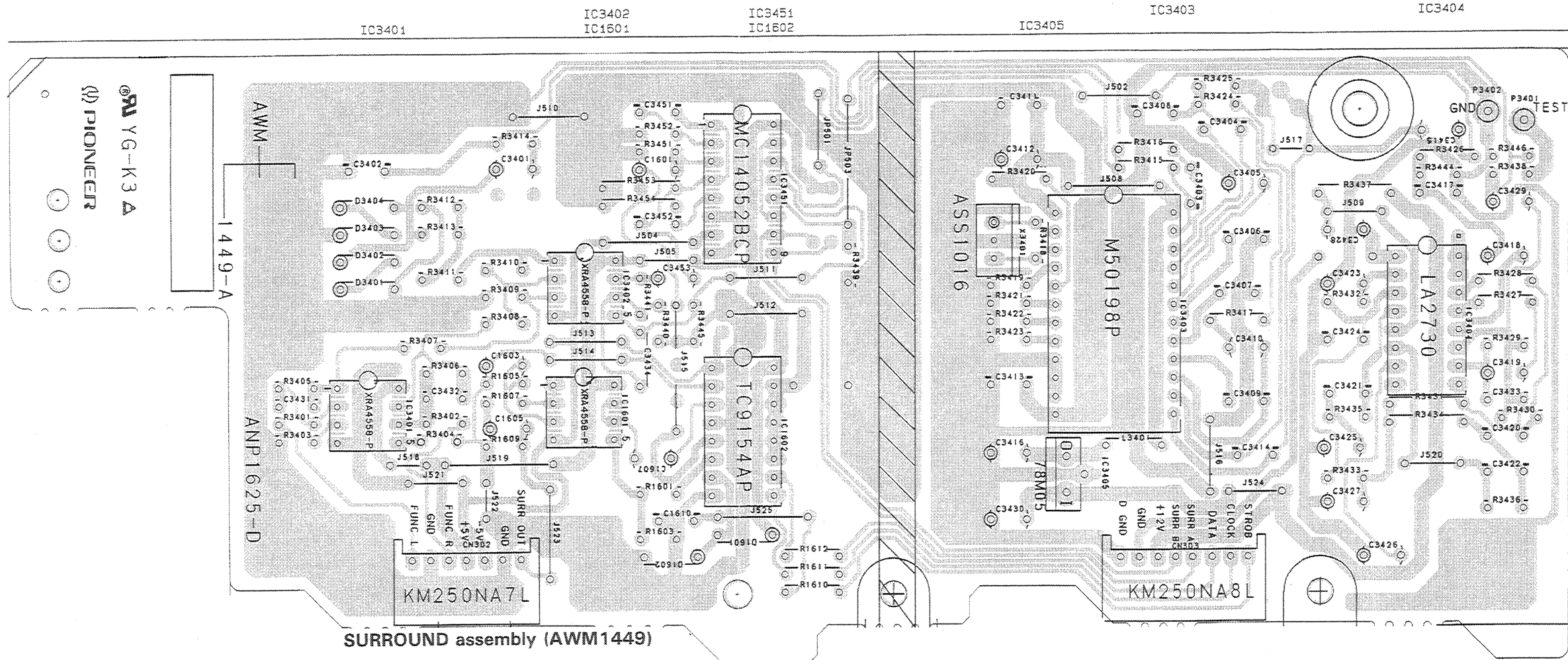
8.3.2 SURROUND Assembly, HEADPHONE Assembly and VOLUME Assembly



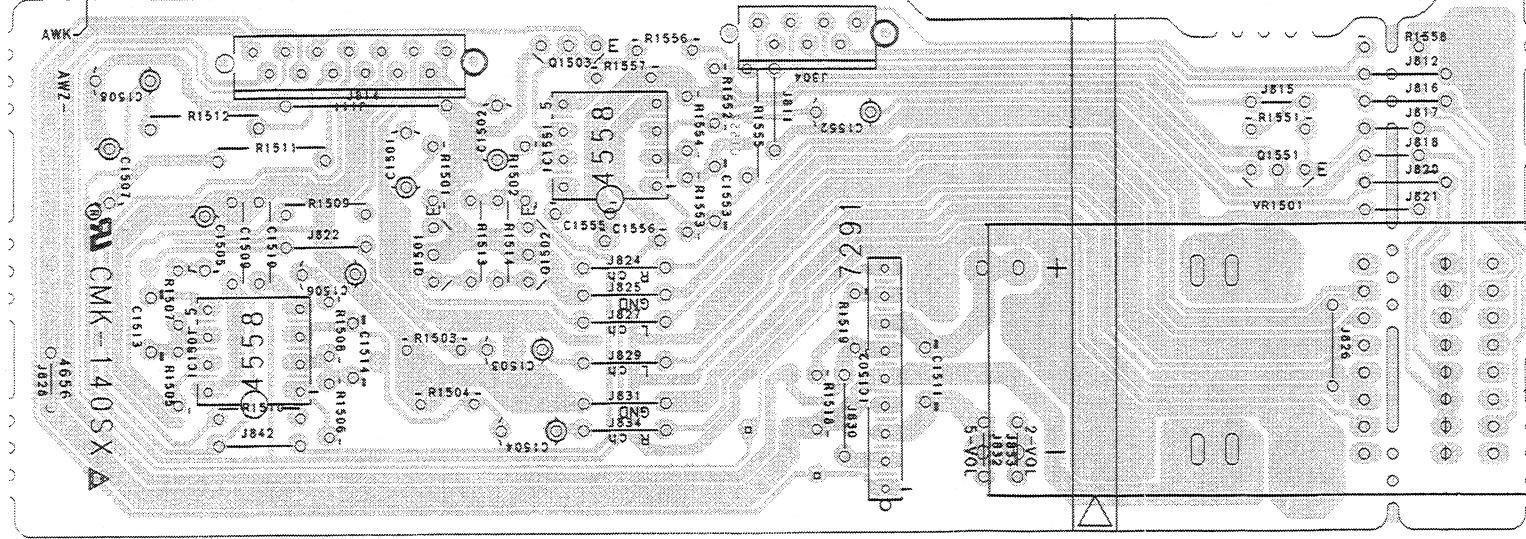


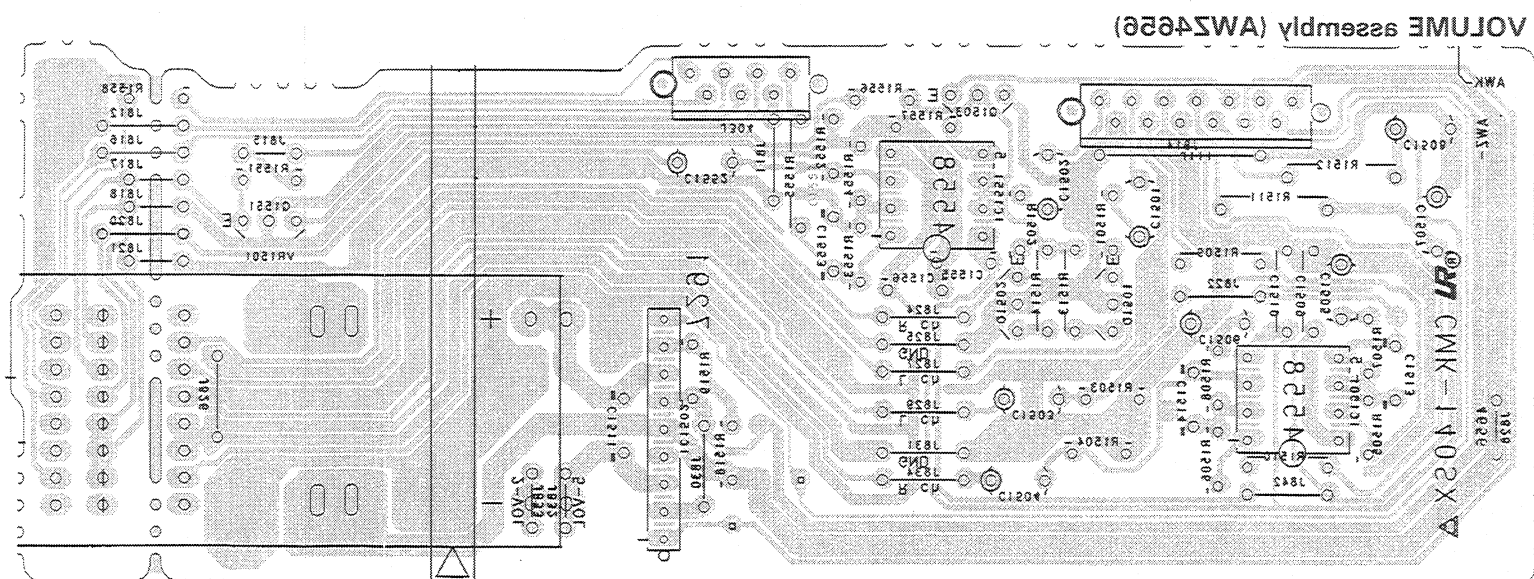
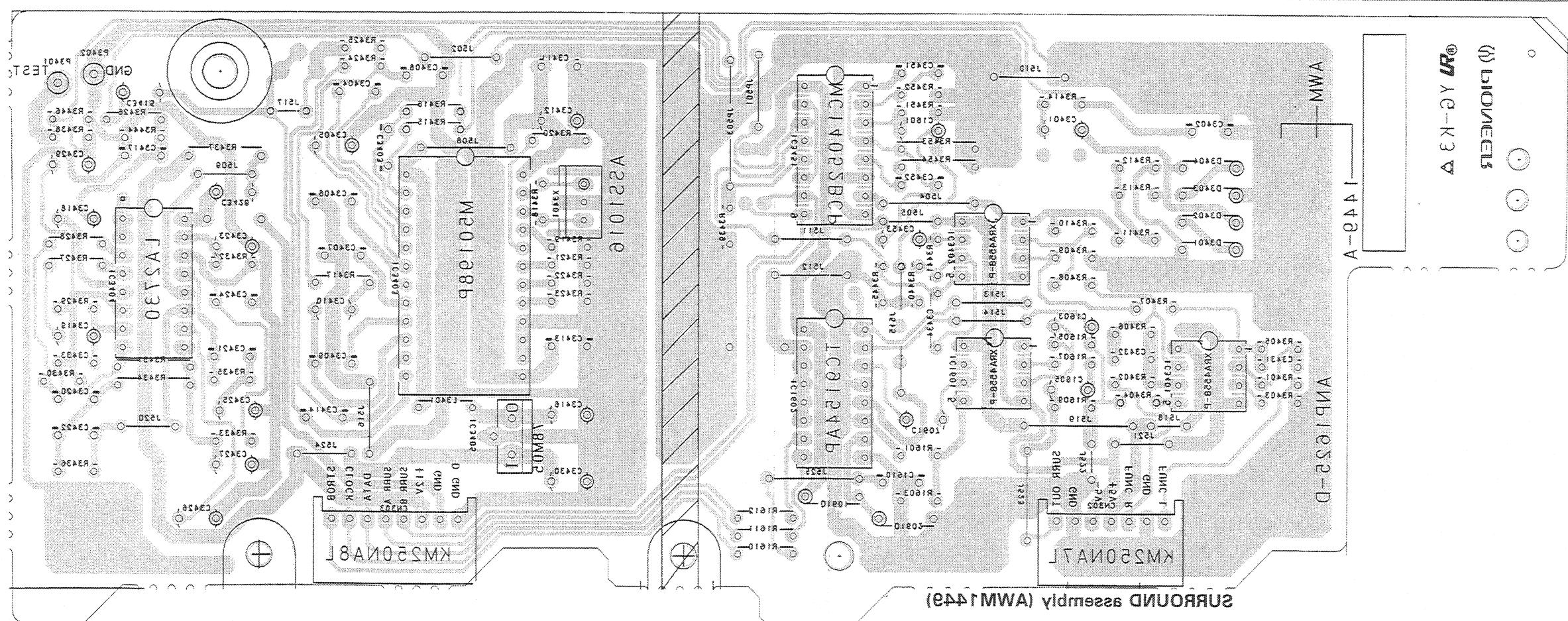
SURROUND assembly
HEADPHONE assembly
VOLUME assembly

SCH-12

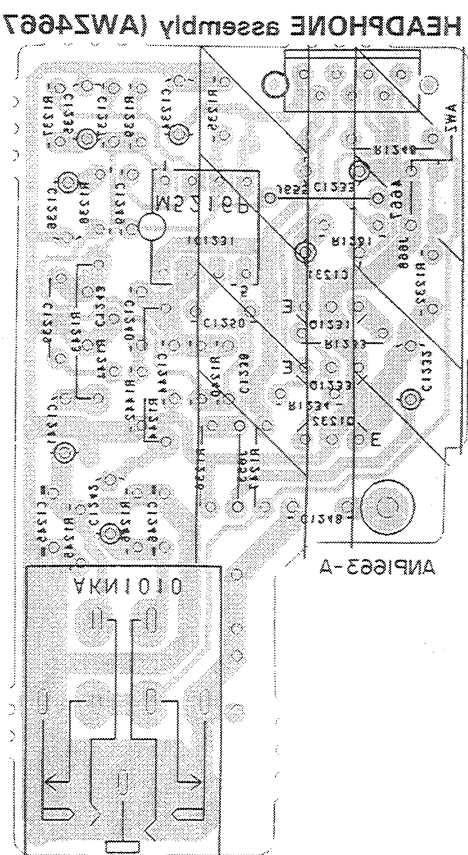


VOLUME assembly (AWZ4656)

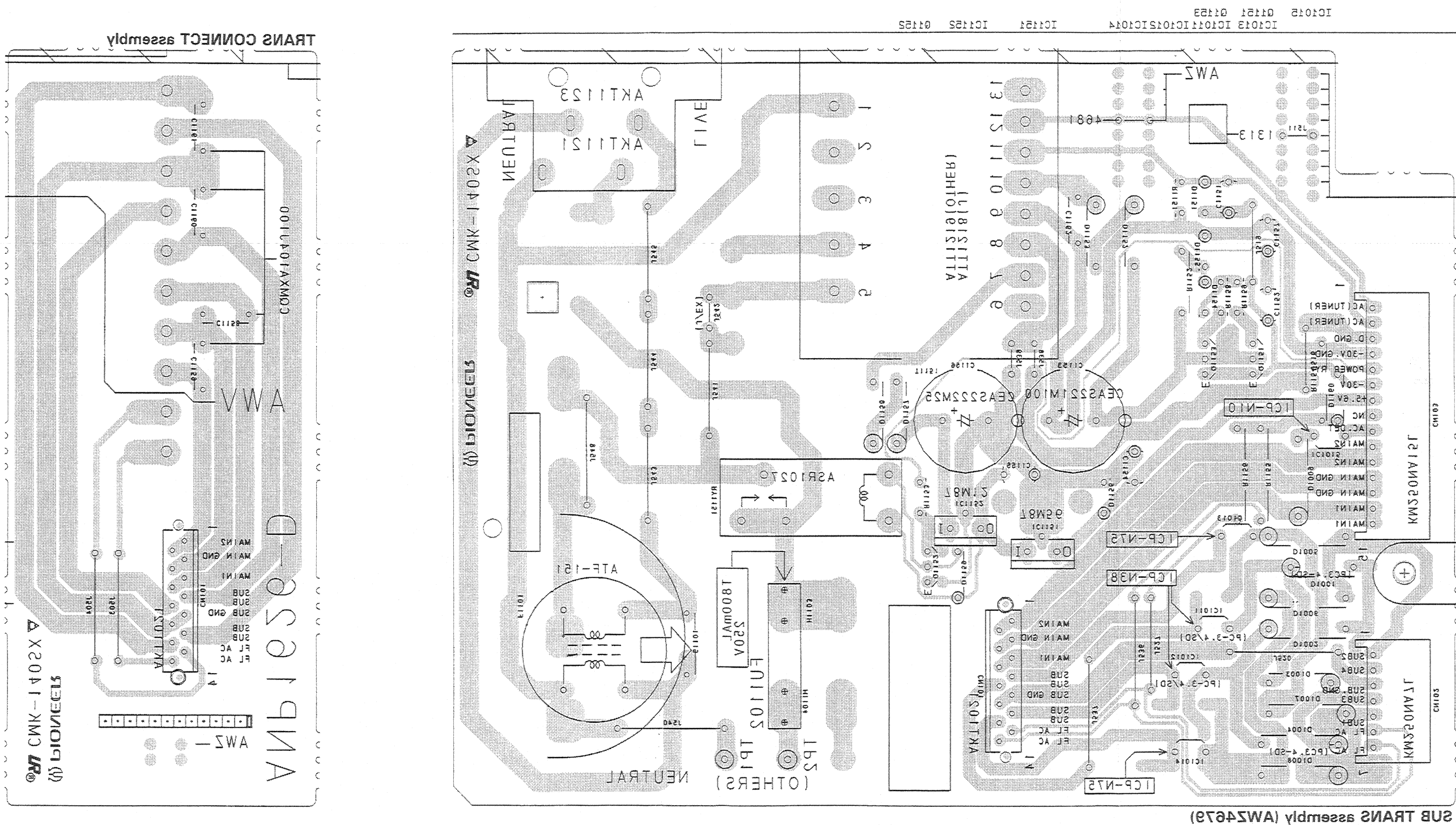




This PCB connection diagram is viewed from the foil side.

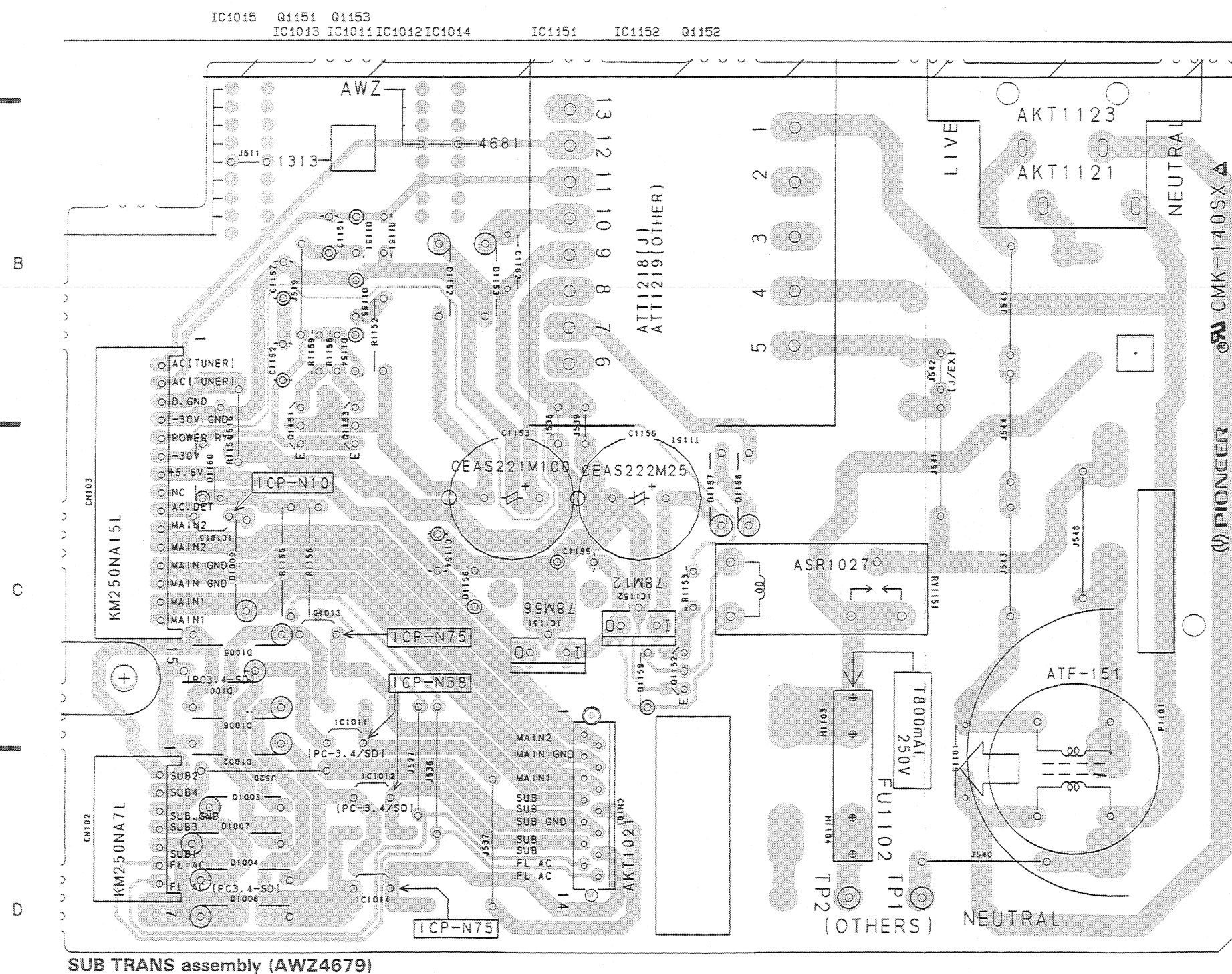


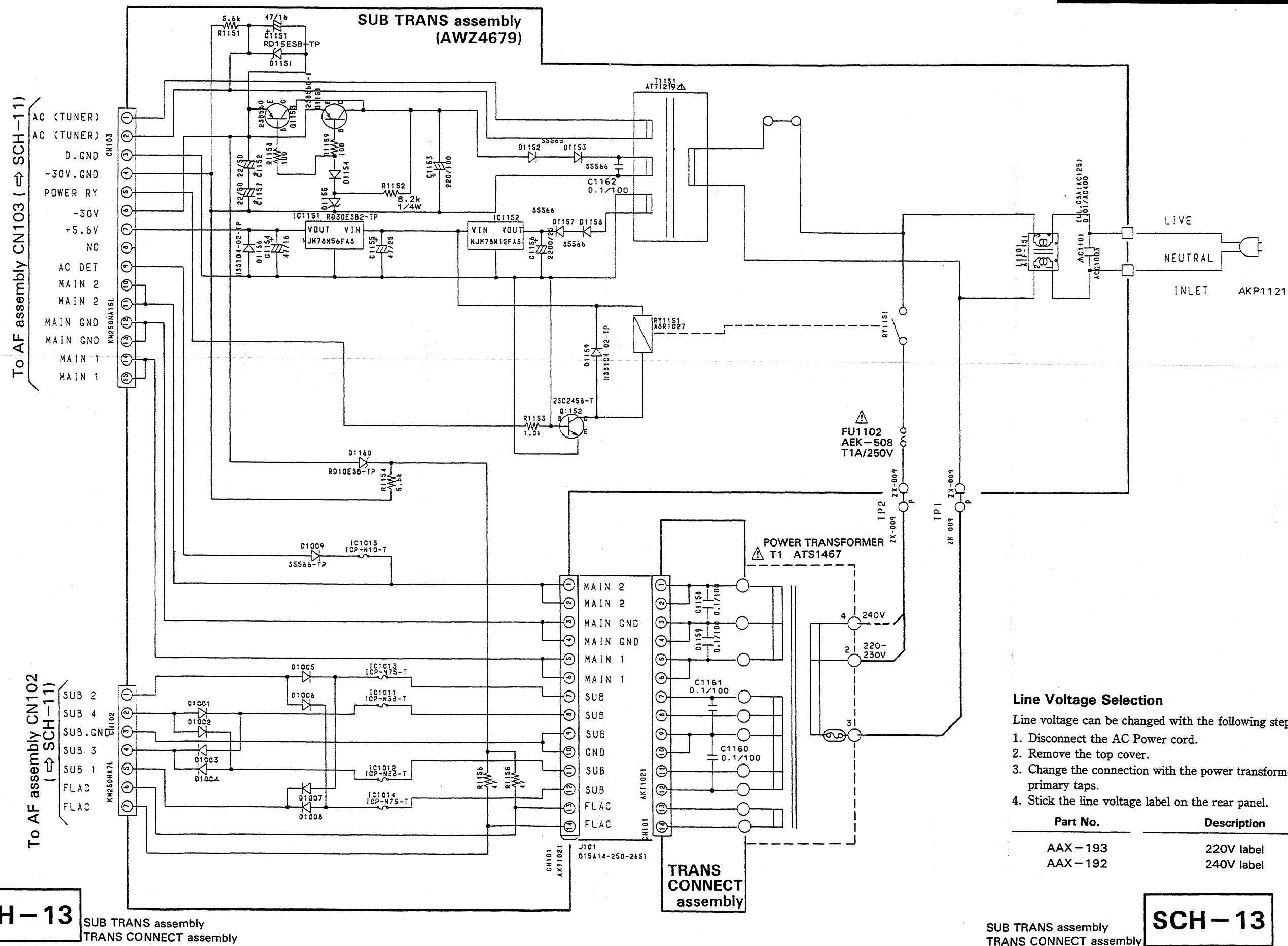
This PCB connection diagram is viewed from the foil side.



8.3.3 SUB TRANS Assembly and TRANS CONNECT Assembly

This PCB connection diagram is viewed from the parts mounted side.

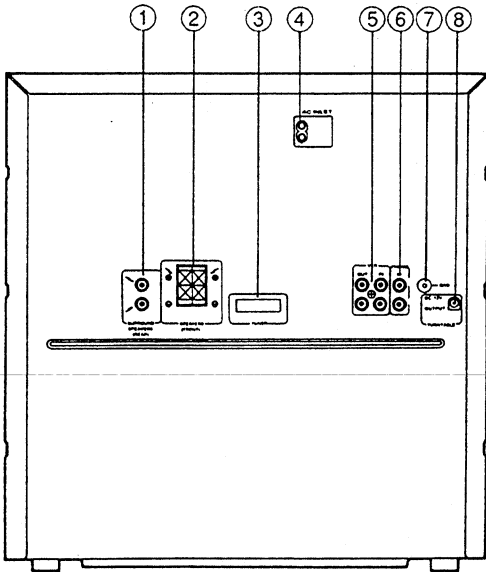




9. PANEL FACILITIES

REAR PANEL FACILITIES

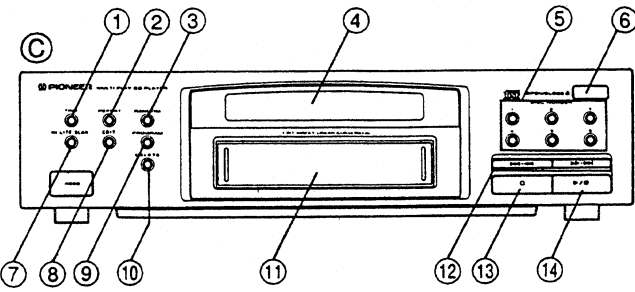
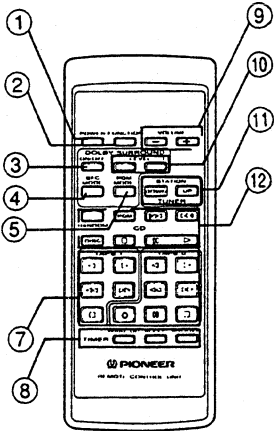
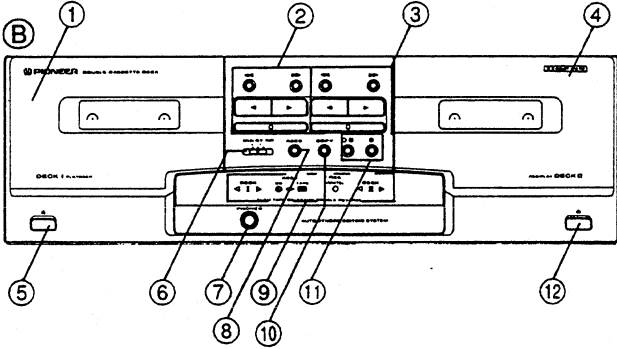
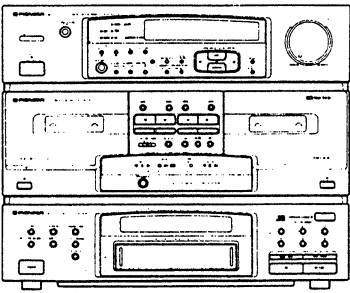
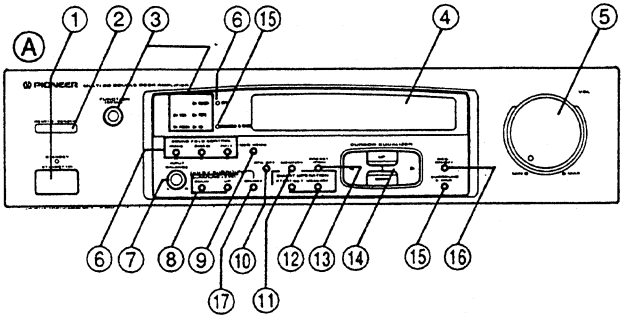
XD-J215M/XD-J210



Multi-CD cassette deck amplifier: XD-J215M/XD-J210

- ① **SURROUND SPEAKERS jacks**
Connect the surround speaker systems.
NOTE:
Connect a speaker system having a nominal impedance of 16 Ω or more.
- ② **SPEAKERS terminals**
L: Connect the left speaker system as seen from the listening position.
R: Connect the right speaker system as seen from the listening position.
NOTE:
Connect a speaker system having a nominal impedance ranging from 8 Ω to 16 Ω .
- ③ **TUNER jacks**
Connect the tuner flat cable here.
- ④ **AC INLET jack**
Connect the power cord here.
- ⑤ **VCR IN/OUT jacks**
IN : Connect to audio output jacks of VCR.
OUT : Connect to audio input jacks of VCR.
- ⑥ **PHONO input jacks**
Connect the audio cord of the turntable to these jacks.
- ⑦ **Ground terminal (GND)**
Connect this to the ground terminal on the turntable (except for PL-J210)
- ⑧ **TURNTABLE (DC 12V OUTPUT) jack**
This jack supplies power to the turntable PL-J210.
Connect the power supply cord of the turntable to this jack.

[XD-J215M]



Multi-CD cassette deck amplifier: XD-J215M

- This unit has an automatic tape type selector.
- Tapes can be played back on deck I; tapes can be played back and recorded on deck II.
- Sound can be recorded as adjusted by the graphic equalizer (excluding synchro copy).
- Use a TYPE I (normal) or TYPE II (High/CrO₂) tape.

(A) : **Amplifier section**

① **POWER STANDBY/ON switch, STANDBY indicator**

This is the switch for electric power.

ON : When set to the ON position, power is supplied and the unit becomes operational.

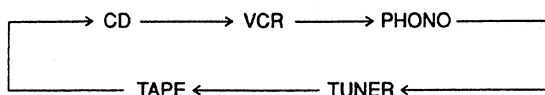
STANDBY : When set to the STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.

The unit is in STANDBY when only the STANDBY indicator above the POWER switch is lit.

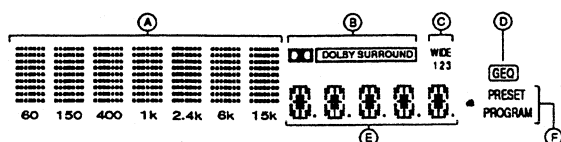
② **REMOTE SENSOR window**

③ **FUNCTION (DEMO) button and indicators**

Used to select the desired source. Each time this button is pressed, the source switches as follows. The desired indicator lights.



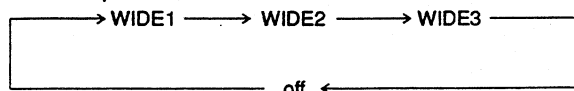
④ **Display section**



(A) Visual display of spectrum analyzer and graphic equalizer.

(B) Lights when the DOLBY SURROUND ON/OFF button is turned on.

(C) Lights when the SURROUND & WIDE button is pressed. Each time it is pressed, the indicates switches as follows.



(D) This lights when the GEQ ON/OFF button is on.

(E) Display the mode names for SOUND FIELD CONTROL and GEQ MODE and the level of the surround speakers during use of the DOLBY SURROUND mode. Also displays the volume level when the SURROUND & WIDE function is ON.

(F) This indicates the memory (PRESET or PROGRAM) that can be recalled with the PRESET/PGM button.

⑤ **VOL. (Volume) control**

⑥ **SOUND FIELD CONTROL buttons and indicators**

Used for calling the preset memory (MOVIE, DISCO, HALL) of the sound field control and for setting your own original memory (PROGRAM A, B, C). The SFC will light when MOVIE, DISCO, or HALL is called.

⑦ **INPUT BALANCE control**

This knob is for adjusting the balance of the DOLBY SURROUND input signal. To adjust, first select ON with the DOLBY SURROUND ON/OFF button. Then apply a monaural sound signal and rotate the knob until the SURROUND sound from the surround speakers becomes minimum.

Making adjustments at this time is easier if you disconnect the front speakers.

NOTE:

Perform these adjustments to assure correct surround sound reproduction.

⑧ **SURROUND/Wide LEVEL button**

[DOWN, UP] :

Adjust the volume of the surround speaker when DOLBY SURROUND or SURROUND & WIDE button is ON.

UP : Increase in the volume to 16 dB.

DOWN : Decreases in the volume to -50 dB.

⑨ **GEQ MODE button**

Use to recall preset equalization settings. Also use to program into memory and recall desired sound field settings.

⑩ **SFC OFF button**

Press to reset the sound field control to no effect.

Turns off SURROUND & WIDE and adjusts GEQ to FLAT.

⑪ **MEMORY button**

Use to memorize your desired sound field control setting.

⑫ SMART OPERATION buttons

[START/SET]

Use when programming memory and operating SMART OPERATION.

[MEMORY]

Use when programming SMART OPERATION into memory.

⑬ PRESET/PGM button

Use to switch between recall of PRESET memory settings and your own original memory settings (PROGRAM) with the GEQ MODE button or SOUND FIELD CONTROL buttons. The memory being recalled is indicated by the indicator in the display section.

⑭ CUSOR EQUALIZER buttons

Use to adjust graphic equalizer settings.

[◀, ▶] : Use these to change the frequency range to be adjusted.

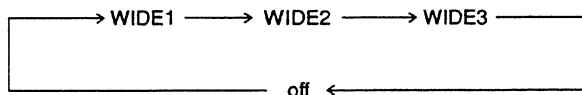
[UP, DOWN] : Use these to adjust the degree of equalization.

⑮ SURROUND & WIDE button and indicator

By turning this switch ON, you can enjoy surround reproduction when surround speakers are used.

By turning this button ON, you can enjoy WIDE reproduction with greater left-right spread when surround speakers are not used.

Each time this button is pressed, WIDE effects switches as follows.



The WIDE effects of the sound intensify in the order of WIDE 1→2→3. The SURROUND & WIDE indicator will light.

NOTE:

In the case of monaural source, SURROUND & WIDE effects cannot be obtained.

⑯ GEQ ON/OFF button

This switches the graphic equalizer on/off. When it's on, the **GEQ** indicator in the display section lights.

⑰ DOLBY SURROUND ON/OFF buttons

Used to switch the DOLBY SURROUND ON/OFF.

⑱ : Cassette deck section

① Deck I cassette door

② Deck I operation buttons

▶ (PLAY: FWD) : For playing back a tape in the forward mode.

◀ (PLAY: REV) : For playing back a tape in the reverse mode.

■ (STOP) : For stopping the tape.

▶▶ (FAST) : Fast forward in forward mode, rewind in reverse mode. Music Search can also be carried out.

◀◀ (FAST) : Rewind in forward mode, fast forward in reverse mode. Music Search can also be carried out.

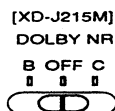
③ Deck II operations buttons

Same as Deck I operation buttons ②.

④ Deck II cassette door

⑤ Deck I EJECT button (▲)

⑥ DOLBY*NR switch



Set this switch to B-type or C-type before recording with the built-in Dolby NR Systems and for playback of tapes which have been recorded using the Dolby NR systems.

- It is recommended that tapes recorded with Dolby B-type NR or Dolby C-type NR be so marked on the label. This will help prevent incorrect setting of the noise reduction switch during playback.

*

Manufactured under license from Dolby Laboratories Licensing Corporation.

DOLBY and the double - D symbol are trademarks of Dolby Laboratories Licensing Corporation.

⑦ PHONES (Head phones) jack

For stereo headphones.

NOTE:

There is no output from the speakers when headphones are plugged into the PHONES jack.

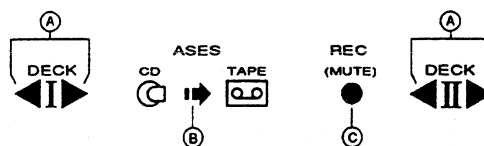
⑧ ASSES button

Used for recording a CD on a cassette tape automatically.

NOTE:

- FINE is the mode when performing CD player EDIT (Computer Allocated Program Editing).
- The NORMAL mode provide a blank space of about five seconds between songs.

⑨ Operation indicators



① Direction (◀, ▶): Indicates direction of tape travel during recording or playback.

② ASSES: Lights when in the ASSES mode.

③ REC (MUTE): Lights when in REC or REC mute.

⑩ COPY button

Used for tape copying.

Copying from the deck I tape to the deck II tape at normal recording/playback speed.

⑪ Deck II control buttons

● **II (REC PAUSE)** : Pressing this button sets recording standby mode. Pressing the play button (◀ or ▶) next starts recording. Pressing this button during recording sets Rec pause mode. Temporarily stops tape travel. Cancels pause mode when pressed again or press the play button.

○ **(MUTE)** : Used for creating a blank space between songs. Pressing this button once creates an unrecorded 4-second space. Continuing to press the button creates an unrecorded space as long as the time the button is pressed.

⑫ Deck II EJECT button (▲)

① CD player section

① TIME button

Use to select the method for displaying the playing time on the display section.

Each time the button is pressed, the indication changes from TIME, REMAIN (track remain) and REMAIN (disc remain): This will not be displayed during programmed playback to TOTAL in that order.

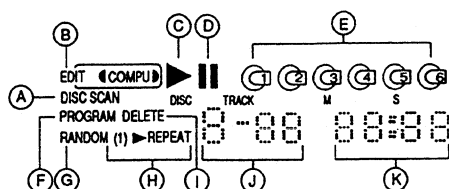
② REPEAT button

Press this button for repeat playback. Pressing the button once, twice or three times will change the repeat mode from single track repeat, to all tracks repeat, and repeat playback cancellation respectively.

③ RANDOM

Press to begin random playback.

④ Display section



① **DISC SCAN** : Lights after pressing the HI-LITE SCAN button.

② **EDIT/COMPU** : Normally EDIT/COMPU is light. When the EDIT button is pressed, ▶ mark lights up.

③ **▶** : Lights during playback.

④ **II** : Lights during temporarily interrupted playback.

⑤ **C<DISC symbol>** : If a nonexistent disc is searched for, the corresponding disc symbol goes off.

⑥ **PROGRAM** : Lights after programming (after program has been memorized).

⑦ **RANDOM** : Lights during random playback.

⑧ **(1)▶REPEAT** : Lights during repeat playback of one tune. (1) extinguishes during repeat playback of all tunes.

⑨ **DELETE** : Lights during delete.

⑩ **DISC TRACK** : Indicates the disc and the track currently being heard.

⑪ **88:88** : Displays the minutes and seconds of the elapsed time, total playback time, and remaining time.

NOTE:

When power is tuned on, the CD player section indicators show different indications depending on the condition (disc loaded or not, etc.) prior to when the power was turned off. This is not a malfunction.

⑫ DISC NUMBER buttons (1—6)

Use to select disc numbers for playback or programming.

⑬ EJECT button (▲)

Press to eject a magazine. When pressed, any magazine inside is expelled forward.

⑭ HI-LITE SCAN button

If this button is pressed while the unit is stopped, the first 10 seconds after the first minute of the first tune on each of the discs from DISC 1 to DISC 6 are played back in sequence (DISC SCAN). If this button is pressed during DISC SCAN, the first ten seconds after the first minute of all the tunes on each of discs from DISC 1 to DISC 6 are played back (TRACK SCAN).

To reset the start-up time of HI-LITE SCAN, press the HI-LITE SCAN button during normal playback.

Enter the time of current playback in memory and 10-second passages on all the remaining tracks are played back at the memorized time.

⑮ EDIT button

Press this button and designate the number of minutes of tape for recording with the Manual/Track search button. The CD player then selects tunes and programs them automatically for recording so that the unrecorded portion at the end of the tape is at the shortest distance.

⑯ PROGRAM button

Use to program a sequence of tracks.

- When this button is pressed, the "PROGRAM" indicator will light. Select a desired disc and track with DISC NUMBER buttons and Manual/Track search buttons. Tunes will be added to the order in which they are specified.
- If only a DISC NUMBER button is pressed, all tracks on the specified disc will be added to the program. The letters "AL" will appear on the indicator.

⑰ DELETE button

Pressing this button and then selecting the discs with the DISC NUMBER buttons (1 through 6) of selecting the tracks with the Manual/Track search buttons will result in the selected discs and tracks not being played even when the PLAY/PAUSE button is pressed.

⑱ Magazine insertion slot

⑲ Manual/Track search buttons (◀◀, ▶▶, ◀, ▶)

These buttons are used for track search and manual search during normal playback, programmed playback or pause. When these buttons are pressed, either the previous tune or the next tune is established. If they are kept depressed, either fast forward or reverse is established, depending upon the direction of pressing.

⑬ STOP button (■)

Press to stop playback. When pressed, the player goes into the stop mode and all operations stop.

[LAST DISC MEMORY]

If no program had been input when the STOP button (■) is pressed to stop the disc, the number of the disc that was just played will be displayed. (the song number is "01").

When the STOP button (■) is pressed another time, the DISC NUMBER displayed will change to "1".

If a program had been input, the disc will be stopped with the DISC NUMBER of the first step and song number displayed.

⑭ PLAY/PAUSE button (▶/II)

During stop, press this button to start playback. During playback, press this button to pause.

When this button is pressed during highlight scanning, the highlight scan will be released, and the disc will be played normally.

Remote control unit

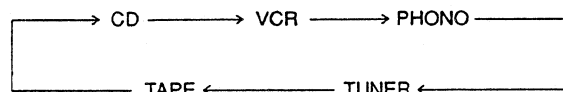
① POWER button

② FUNCTION button

The amplifier function automatically switches to the music source being operated when you press the CD playback (▶) cassette deck playback (◀, ▶) or tuner station controls.

Use to switch the input.

Each time this button is pressed, it switches as follows:



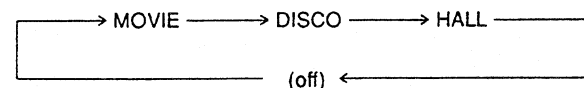
The desired indicator lights.

③ DOLBY SURROUND ON/OFF button

Used to switch the DOLBY SURROUND ON/OFF.

④ SFC MODE button

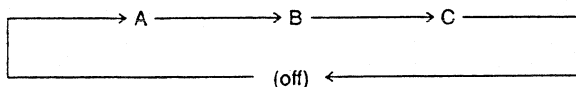
Use to select one of the preset sound fields. Each time the button is pressed, one of the preset sound fields will be selected, in the following order:



Turn off SURROUND & WIDE and adjusts GEQ to FLAT.

⑤ PGM MODE button

This button is used when selecting one of your own personally created sound fields. Each time the button is pressed, one of the sound fields will be selected, in the following order:



Turn off SURROUND & WIDE and adjusts GEQ to FLAT.

⑦ Deck operation buttons.

[TAPE I]

- ◀, ▶ : Begins playback
- ◀◀, ▶▶ : Fast Forward or rewind
- : Stop

[TAPE II]

- ◀, ▶ : Begins playback
- ◀◀, ▶▶ : Fast forward or rewind
- : Stop
- : To set to recording standby mode. The REC indicator lights and the direction indicators (◀ and ▶) flash. Recording begins when you press the play button (◀ or ▶).
- II : Temporarily stops tape travel. Cancels pause mode when pressed again or press the play button (◀ or ▶).

⑧ Timer operation buttons

- SLEEP : Sets the sleep timer.
- SNOOZE : Turns off power if pressed after timer playback begins. Timer playback begins again approx. 5 minutes later.
- WAKE-UP : Timer playback setting/cancellation can be performed when the timer playback time has been set. This is shown in the tuner display section.

⑨ VOLUME + (UP)/- (DOWN) buttons

When pressed, VOLUME on the amplifier is actually moved by a motor.

⑩ DOLBY SURROUND/Wide rear LEVEL +/- buttons

Adjust the volume level of the surround speaker when DOLBY SURROUND or SURROUND & WIDE is on.

- + ... Increases in the volume to 16 dB.
- ... Decreases in the volume to -50 dB.

⑪ TUNER STATION - (DOWN), + (UP) buttons

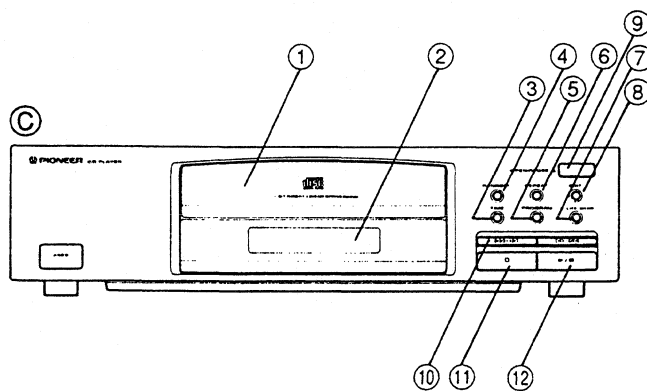
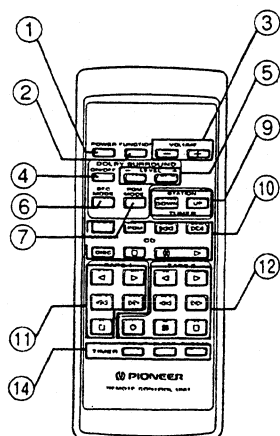
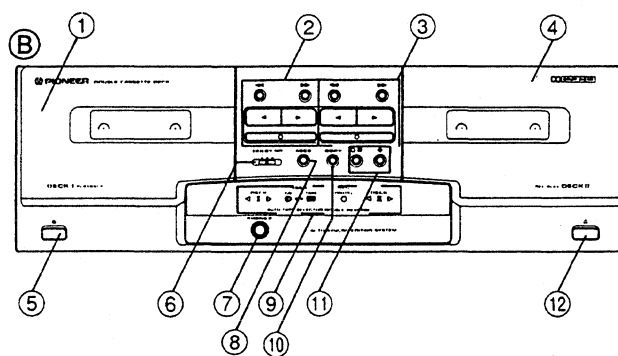
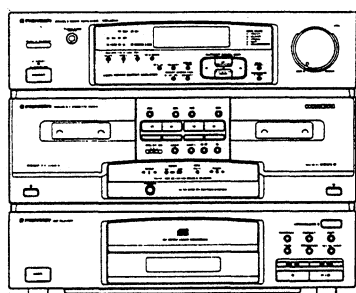
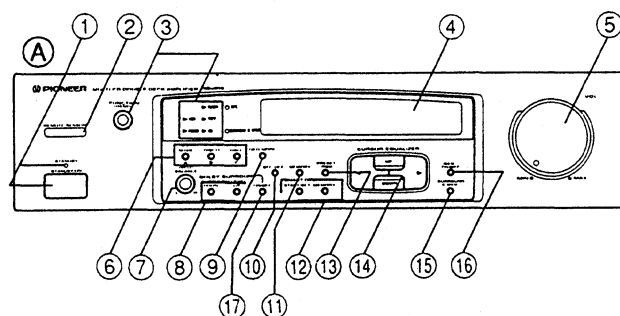
Used for locating stations.

- (DOWN) : Stations change in order in the downward direction.
- + (UP) : Stations change in order in the upward direction.

⑫ CD operation buttons

- RANDOM : Does a RANDOM playback.
- PGM : Select programmed CD playback.
- ▶ : Play
- DISC : DISC selection
- : Stop
- II : Pause (To release, press PAUSE button once more, press PLAY button, or press the PLAY/PAUSE button of the main unit.)
- ◀◀, ▶▶ : Track search

XD-J210



CD cassette deck amplifier: XD-J210

- This unit has an automatic tape type selector.
- Tapes can be played back on deck I; tapes can be played back and recorded on deck II.
- Sound can be recorded as adjusted by the graphic equalizer (excluding synchro copy).
- Use a TYPE I (normal) or TYPE II (High/CrO₂) tape.

④ : Amplifier section

① POWER STANDBY/ON switch/STANDBY indicator

This is the switch for electric power.

ON : When set to the ON position, power is supplied and the unit becomes operational.

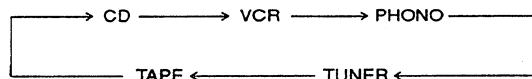
STANDBY : When set to the STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.

The unit is in STANDBY when only the STANDBY indicator above the POWER switch is lit.

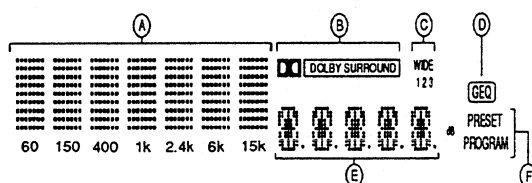
② REMOTE SENSOR window

③ FUNCTION (DEMO) button and indicators

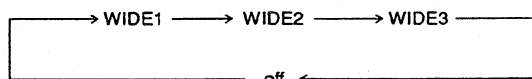
Used to select the desired source. Each time this button is pressed, the source switches as follows. The desired indicator lights.



④ Display section



- ④ A Visual display of spectrum analyzer and graphic equalizer.
 ④ B Lights when the DOLBY SURROUND ON/OFF button is turned ON.
 ④ C Lights when the SURROUND & WIDE button is pressed. Each time it is pressed, the indicates switches as follows.



- ④ D This lights when the GEQ ON/OFF button is ON.
 ④ E Displays the mode names for SOUND FIELD CONTROL, GEQ MODE and the level of the surround speakers during use of the DOLBY SURROUND mode. Also displays the volume level when the SURROUND & WIDE function is ON.
 ④ F This indicates the memory (PRESET or PROGRAM) that can be recalled with the PRESET/PGM button.

⑤ VOL. (Volume) control

⑥ SOUND FIELD CONTROL buttons and indicator (MOVIE/A, DISCO/B, HALL/C)

Used when calling the preset memory (MOVIE, DISCO, HALL) of sound field control and setting your own original memory (PROGRAM-A, B, C).

The SFC and SURROUND & WIDE indicators will light when MOVIE, DISCO, or HALL is called.

⑦ INPUT BALANCE control

This knob is for adjusting the balance of the DOLBY SURROUND input signal. To adjust, first select ON with the DOLBY SURROUND ON/OFF button. Then apply a monaural sound signal and rotate the knob until the SURROUND sound from the surround speakers becomes minimum.

Making adjustments at this time is easier if you disconnect the front speakers.

NOTE:

Perform these adjustments to assure correct surround sound reproduction.

⑧ SURROUND/wide rear LEVEL buttons

[DOWN/UP]

Adjust the volume level of the surround speaker when DOLBY SURROUND or SURROUND & WIDE is on.

UP : Increase in the volume to 16 dB.

DOWN : Decreases in the volume to -50 dB.

⑨ GEQ MODE button

Use to recall preset equalization settings. Also use to program into memory desired sound field settings.

⑩ SFC OFF button

Press to reset the sound field control to no effect.

Turns off SURROUND & WIDE and adjusts GEQ to FLAT.

⑪ MEMORY button

Use to memorize your desired sound field control setting.

⑫ SMART OPERATION buttons

[START/SET]

Use when programming memory and operating SMART OPERATION.

[MEMORY]

Use when programming SMART OPERATION into memory.

⑬ PRESET/PGM (PROGRAM) button

Use to switch between recall of PRESET memory settings and your own original memory settings (PROGRAM) with the GEQ MODE button or SOUND FIELD CONTROL buttons. The memory being recalled is indicated by the indicator in the display section.

⑭ CUSOR EQUALIZER buttons

Use to adjust graphic equalizer settings.

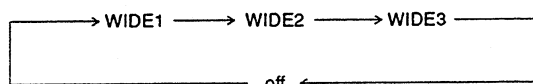
[◀, ▶] : Use these to change the frequency range to be adjusted.

[UP, DOWN] : Use these to adjust the degree of equalization.

⑮ SURROUND & WIDE button and indicator

By turning this switch ON, you can enjoy surround reproduction when surround speakers are used.

By turning this button ON, you can enjoy WIDE reproduction with greater left-right spread when surround speakers are not used. Each time this button is pressed, WIDE effects switches as follows.



The WIDE effects of the sound intensify in the order of WIDE 1→2→3. The SURROUND & WIDE indicator will light.

NOTE:

In the case of monaural source, SURROUND & WIDE effects cannot be obtained.

⑯ GEQ ON/OFF button

This switches the graphic equalizer ON/OFF. When it's ON the GEQ indicator in the display section lights.

NOTE:

Sound comes from the surround speakers regardless of whether this button is on or off.

⑰ DOLBY SURROUND ON/OFF buttons

Used to switch the DOLBY SURROUND ON/OFF.

⑱ GEQ MODE printed indications

Displays of the preset equalization pattern name being recalled with the GEQ MODE button.

Ⓑ : Cassette Deck Section

① Deck I cassette door

② Deck I operation buttons

- ▶ (PLAY: FWD) : For playing back a tape in the forward mode.
- ◀ (PLAY: REV) : For playing back a tape in the reverse mode.
- (STOP) : For stopping the tape.
- ▶▶ (FAST) : Fast forward in forward mode, rewind in reverse mode. Music Search can also be carried out.
- ◀◀ (FAST) : Rewind in forward mode, fast forward in reverse mode. Music Search can also be carried out.

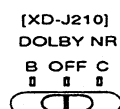
③ Deck II operations buttons

Same as Deck I operation buttons ②.

④ Deck II cassette door

⑤ Deck I EJECT button (▲)

⑥ DOLBY* NR switch



Set this switch to B-type or C-type before recording with the built-in Dolby NR Systems and for playback of tapes which have been recorded using the Dolby NR systems.

- It is recommended that tapes recorded with Dolby B-type NR or Dolby C-type NR be so marked on the label. This will help prevent incorrect setting of the noise reduction switch during playback.

*

- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
- "DOLBY" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

⑦ PHONES (Headphones) jack

For stereo headphones.

NOTE:

There is no output from the speakers when headphones are plugged into the PHONES jack.

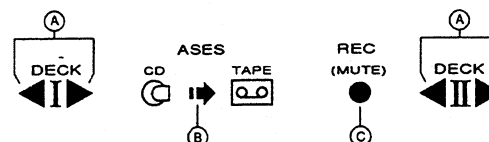
⑧ ASES button

Used for recording a CD on a cassette tape automatically.

NOTE:

- FINE is the mode when performing CD player EDIT (Computer Allocated Program Editing).
- The NORMAL mode provides a blank space of about five seconds between songs.

⑨ Operation indicators



A Direction (◀, ▶):

Indicates direction of tape travel during recording or playback. Flashes slowly in Pause mode. Flashes rapidly during Music Search (MS).

B ASES:

Lights when in the ASES mode.

C REC (MUTE):

Lights when it flashes during tape copying.

⑩ COPY button

Used for tape copying.

Copying from the deck I tape to the deck II tape at normal recording/playback speed.

⑪ Deck II CONTROL buttons

- II (REC PAUSE) : Pressing this button sets recording standby mode. Pressing the PLAY button (▶ or ▶▶) next starts recording. Pressing this button during recording sets REC PAUSE mode. Temporarily stops tape travel. Cancels pause mode when pressed again or press the PLAY button.

○ (MUTE)

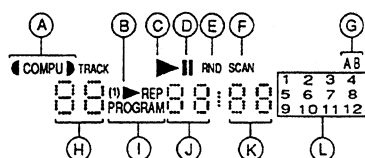
: Used for creating a blank space between songs. Pressing this button once creates an unrecorded 4-second space. Continuing to press the button creates an unrecorded space as long as the time the button is pressed.

⑫ Deck II EJECT button (▲)

③ : CD player section

① Disc tray

② Display section



- ① : Display when Compu PGM editing is set or used.
- ② (1) ► REP : Lights during repeat playback of single track or all tracks.
- ③ ► : Lights during playback.
- ④ II : Lights during temporarily interrupted playback.
- ⑤ RND : Lights during random playback.
- ⑥ SCAN : Lights during HI-LITE scan playback.
- ⑦ A/B (music calendar) : TAPE SIDE A/TAPE SIDE B
After editing, the track numbers that can be recorded on the A (B) side of the tape will light.
- ⑧ TRACK (figure) : Displays the current track number (during normal playback and programmed playback) or the track being programmed (during programmed operation).
- ⑨ PROGRAM : Lights after programming (after program has been memorized).
- ⑩ Minutes (figure) : Displays the minutes of the elapsed time, total playback time, and remaining time.
- ⑪ Seconds (figure) : Displays the seconds of the elapsed time, total playback time, and remaining time.
- ⑫ 1-12 (music calendar) : Displays the track numbers.

NOTE:

- When power is turned ON, the CD player section indicators show different indications depending on the condition (disc loaded or not, etc.) prior to when the power was turned off. This is not a malfunction.

③ TIME button

This button selects the display mode. Each time the button is pressed, the display changes from Time, Remain, to Total in that order.

- **Time** : Displays the track number of the track being played (TRACK) and the elapsed time (minutes and seconds).
- **Remain** : Displays the remaining time on the track being played. When the TIME button is pressed again, the remaining time on the disc being played will be displayed.
- **Total** : Displays the total number of tracks on the disc (TRACK) and the total playback time will be displayed. During playback, the display goes on for about 5 seconds before changing to the time display.

④ RANDOM Play button

Press to begin random playback.

⑤ PROGRAM button

Use to program a sequence of tracks.

- Press this button after selecting a desired track with track search button. Tunes will be added to the program in the order in which they are specified.

⑥ REPEAT button

Press this button for repeat playback. Pressing the button once, twice, or three times will change the repeat mode from single track repeat, all tracks repeat, to repeat playback cancellation, respectively.

⑦ HI-LITE SCAN button

10 second passages are played starting from the first minute of each track on the CD, in sequence, beginning with the first track.

To set the point in the tracks you want to scan, press this button during playback. The elapsed time is memorized, and then ten second passages of all the remaining tracks are played at the memorized time.

⑧ EDIT button

Press this button, and with the Manual/Track search buttons (◀◀ • ▶▶, ▶▶ • ▶▶) specify the length of tape you want to use for recording. Before recording, the CD player automatically programs the order of tracks to minimize the amount of unused tape at the end of a selected tape length.

⑨ OPEN/CLOSE button

Press when you wish to eject a disc. Each time the button is pressed, the tray is alternately pushed out or pulled in.

⑩ MANUAL/TRACK SEARCH buttons

(◀◀ • ▶▶, ▶▶ • ▶▶)

Use these buttons to perform track search and manual search during regular playback, programmed playback, or during pause.

Press a button to skip to the previous or the next track. You will continue moving to the next track in the direction of the button you pressed as long as you continue pressing the button.

Keep the button depressed until you come to the part you want to listen to.

⑪ STOP button (■)

Press to stop playback. When pressed, the player goes into stop mode and all operations stop.

Press to clear a program. When pressed during stop mode, the program stored in memory is cleared.

⑫ PLAY/PAUSE button (▶ / II)

Press to begin playback.

When playing back, press to temporarily interrupt playback. When pressed again, the pause mode is canceled and playback resumes.

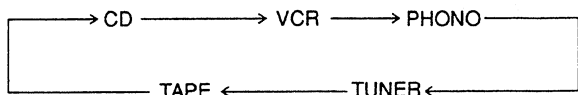
Remote control unit

① POWER button

② FUNCTION button

The amplifier function automatically switches to the music source being operated when you press the CD playback (▶) cassette deck playback (◀, ▶), or tuner station controls.

Used to switch the input. Each time this button is pressed, it switches as follows.



The desired indicator lights.

③ VOLUME + (UP)/- (DOWN) buttons

When pressed, VOLUME on the amplifier is actually moved by a motor.

④ DOLBY SURROUND ON/OFF button

Used to switch the DOLBY SURROUND ON/OFF.

⑤ DOLBY SURROUND/wide rear LEVEL (+/-) buttons

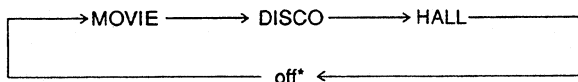
Adjust the volume level of the surround speaker when DOLBY SURROUND or SURROUND & WIDE is on.

+: Increases in the volume to 16 dB.

-: Decreases in the volume to -50 dB.

⑥ SFC MODE button

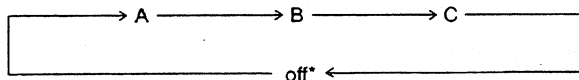
Use to select one of the preset sound fields. Each time the button is pressed, one of the preset sound fields will be selected, in the following order:



* Turn off SURROUND & WIDE and adjusts GEQ to FLAT.

⑦ PGM (PROGRAM) MODE button

This button is used when selecting one of your own personally created sound fields. Each time the button is pressed, one of the sound fields will be selected, in the following order:



* Turn off SURROUND & WIDE and adjusts GEQ to FLAT.

⑨ TUNER STATION - (DOWN), + (up) buttons

• Used for locating stations.

+: Stations change in order in the upward direction.

-: Stations change in order in the downward direction.

⑩ CD operation buttons

▶ : PLAY

DISC : This button does not function.

■ : STOP

|| : PAUSE

◀, ▶ : TRACK SEARCH

RANDOM : Does a RANDOM playback,

PGM : Select programmed CD playback.

⑪ TAPE I operation buttons

Same as Deck I operation buttons on the cassette deck amplifier.

⑫ TAPE II operation buttons

Same as Deck I operation buttons and Deck II control buttons on the CD cassette deck amplifier (except MUTE, REC PAUSE).

●(REC): To set to recording standby mode. The REC indicator lights and the direction indicators (◀ and ▶) flash. Recording begins when you press the PLAY button (▶ or ▶).

II(PAUSE): Temporarily stops tape travel. Cancels pause mode when pressed again or press the PLAY button.

⑬ Timer operation buttons

SLEEP: Sets the sleep timer.

WAKE-UP: Timer playback setting/cancellation can be performed when the timer playback time has been set.

This is shown in the tuner display section. (XD-J210 only)

SNOOZE: Turns off power if pressed after timer playback begins. Timer playback begins again approx. 5 minutes later.

10. SPECIFICATIONS

Multi CD double deck amplifier: XD-J215M

Amplifier Section

[XD-J215M]

Music power (DIN) 65W+65W (1kHz T.H.D. 1% 8Ω)
 Continuous Power Output (DIN) ..38W+38W (1kHz, T.H.D. 1% 8Ω)
 Surround Output music power (DIN) 10W (1kHz 1%, 16Ω)

Graphic equalizer frequency band 60 Hz, 150 Hz,
 400 Hz, 1 kHz, 2.4 kHz, 6 kHz, 15 kHz, ±7 dB
 S/N (DIN, continuous power/50 mW) 68 dB/60 dB
 PHONO 68 dB/60 dB
 Total Harmonic Distortion (40 Hz to 20,000 Hz, 22.5W, 8Ω)*
 No more than 0.2%
 Input sensitivity/impedance
 PHONO (MM) 2.5 mV/47 kΩ
 VCR 150 mV/25 kΩ

Double Deck Section

Systems 4 track, 2-channel stereo
 Heads Recording/playback head x 1
 Erasing head x 1
 Playback head x 1
 Motor DC servo 2 speed motor x 2
 Wow and Flutter No more than 0.09% (W.PEAK)
 Fast Winding Time Approximately 105 seconds (C-60 tape)
 Frequency Response (-20 dB recording):
 Type I (Normal) tape 35 Hz to 14,000 Hz ±6 dB (EIAJ)
 Type II (HIGH/CrO₂) tape 35 Hz to 15,000 Hz ±6 dB (EIAJ)
 Signal-to-Noise ratio
 Dolby NR OFF 56 dB
 Noise Reduction Effect
 Dolby B-type NR ON More than 5 dB (at 5 kHz)
 Dolby C-type NR ON (XD-J215M only)
 More than 19 dB (at 5 kHz)

CD Section

Type Compact disc digital audio system
 Frequency response 4 Hz—20 kHz
 Number of channels 2 channels (stereo)

Furnished Parts

Operating Instructions 1
 Remote Control Unit 1
 Dry Cell Batteries 2
 Six-Compact disc-Magazine 1
 Power cord 1

Miscellaneous

Power requirements a.c. 220 Volts—, 50/60 Hz
 Power Consumption 275W
 Dimensions 360 (W) x 300.5 (H) x 344 (D) mm
 Weight (without package) 10 kg

The Magazine Type Multi-Play CD Players with  mark and the Magazines with the same mark are compatible for 5-inch (12 cm) discs.

CD double deck amplifier: XD-J210

Amplifier Section

[XD-J210]

Music Power (DIN) 65W+65W (1 kHz T.H.D. 1%, 8Ω)
 Continuous Power Output 38W+38W
 (1 kHz T.H.D. 1%, 8Ω)
 Surround Output Music Power (DIN) 10W (1kHz, 1%, 16Ω)

Graphic equalizer frequency band 60 Hz, 150 Hz,
 400 Hz, 1 kHz, 2.4 kHz, 6 kHz, 15 kHz, ±7 dB
 S/N (DIN, continuous power/50mW) 68dB/60dB
 PHONO 68dB/60dB
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Double Deck Section

Systems 4 track, 2-channel stereo
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 Signal-to-Noise ratio
 Dolby NR OFF 56 dB
 Noise Reduction Effect
 Dolby B-type NR ON More than 5 dB (at 5 kHz)
 Dolby C-type NR ON (XD-J210 only) .. More than 19 dB (at 5 kHz)

CD Section

Type Compact disc digital audio system
 Frequency response 4 Hz—20 kHz
 Number of channels 2 channels (stereo)

Furnished Parts

Operating Instructions 1
 Remote Control Unit 1
 Dry Cell Batteries 2
 Power cord 1

Miscellaneous

Power requirements a.c. 220 Volts—, 50/60 Hz
 Power Consumption 275W
 Dimensions 360 (W) x 300.5 (H) x 344 (D) mm
 Weight (without package)
 XD-J210 9.5kg

- Specifications and design subject to possible modification without notice due to improvement.

* Measured By Audio Spectrum Analyzer.